

OCTOBER, 1950

# Commercial Refrigeration

AND AIR CONDITIONING



MERCHANDISING, SELLING, INSTALLATION AND MAINTENANCE OF  
COMMERCIAL REFRIGERATION AND AIR CONDITIONING EQUIPMENT

# SCREEN OUT YOUR SERVICE TROUBLES!

**install an ALCO Strainer ahead of every valve**

High-efficiency ALCO Strainers save you dollars of time and trouble... more than pay for themselves... by keeping valve-clogging dirt where it belongs: out of circulation!

ALCO Strainers (for Refrigerants, Brine, Water, Steam, Air, Gas and Oil) are expertly engineered to give you:

- maximum screening area with minimum pressure drop
- long life—all materials rust-proof or corrosion-proof, depending on purpose
- easy cleaning—all except Types 916, 920 and 921 can be opened for cleaning without breaking the line

## ALCO STRAINERS

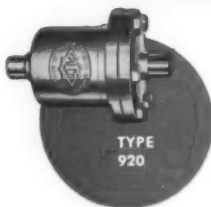
save service headaches



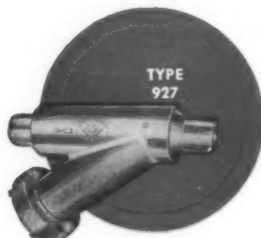
**"THROW-AWAY" TYPE 916**  
The trustworthy low-cost strainer for installations where replacement is preferable to servicing



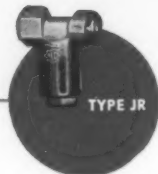
TYPES 928  
AND 929



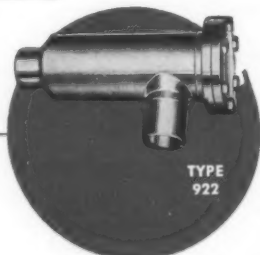
TYPE  
920



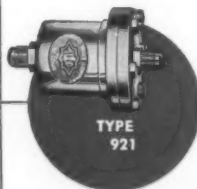
TYPE  
927



TYPE JR



TYPE  
922



TYPE  
921



TYPE SR



A QUARTER-CENTURY  
OF PIONEERING AND PROGRESS

Designers and Manufacturers of Thermostatic Expansion Valves; Evaporator Pressure Regulators; Solenoid Valves; Float Valves; Float Switches.

SEE YOUR ALCO WHOLESALE

# ALCO VALVE CO.

843 KINGSLAND AVE. • ST. LOUIS 5, MO.

4401

ALCO HAS REFRIGERATION UNDER CONTROL

**BRUNNER**  
SINCE 1906

**REFRIGERATION** helps you serve better

*Your Good Name and Ours*

could form  
a profitable  
partnership



Talk to anyone in the trade who has sold or installed Brunner Refrigeration Condensing Units and they'll tell you *from experience* what it means in business dollars and cents to deal with a progressive, understanding organization that builds its products just a little bit better than is expected.

As a distributor or dealer, you need not be told how much easier it is to "sell" a job when you are in a position to specify and deliver *known* and *accepted* equipment.

The Brunner Manufacturing Company, with all their 44 years continual growth, has moved ahead so fast these past few years there are still some

aggressive refrigeration equipment dealers who have missed the important details of what we may be able to contribute to their efforts toward securing more *profitable* business.

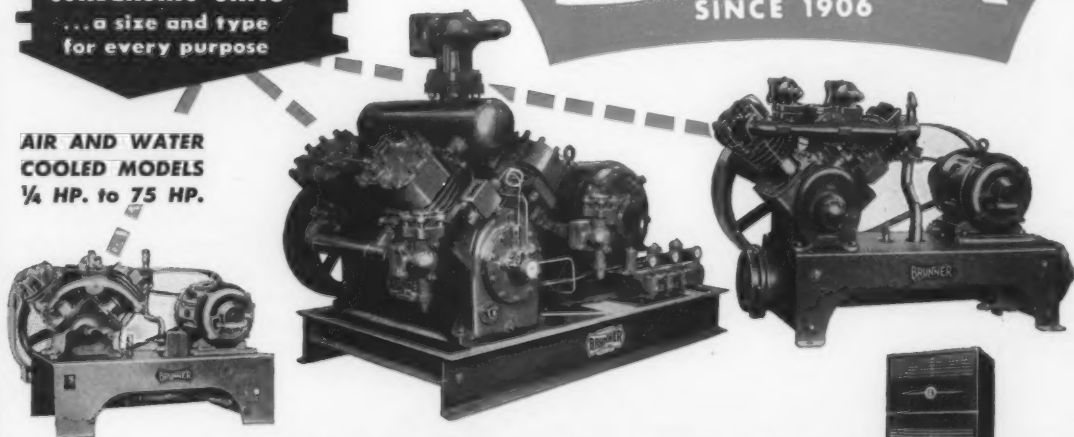
If you are at all concerned in the sale or installation of refrigeration and air conditioning equipment, Brunner has a story to tell that you should at least know about. A factory representative will call without obligation. Write us and say when.

**BRUNNER MANUFACTURING COMPANY**  
UTICA 1, NEW YORK, U. S. A.

**REFRIGERATION  
CONDENSING UNITS**

...a size and type  
for every purpose

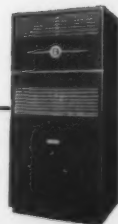
**AIR AND WATER  
COOLED MODELS**  
1/4 HP. to 75 HP.



**BRUNNER**  
SINCE 1906

**AIR CONDITIONING**

Self Contained Units in 4 sizes: 3 - 5 - 7½ and 10 HP.  
Remote Installation Types from 5 to 75 HP.



# YOU



dealer?  
jobber?  
engineer?



... and our complete line



**Tenney Unit Coolers** are typical of Tenney's scientific design and ability to meet the needs of any type of installation, large or small. They look and are modern. They have the correct ratio of prime to secondary surface with a staggered arrangement and rifled interior for highest efficiency. They have added surface and assured defrost cycles plus "sweat" elimination and safe comfort cooling. They have extra capacity, variable direction of airflow, non-leak joints, positive fin to tube bond. And—they're easy to install. You can't go wrong with Tenney.

*Remember—you always get more from Tenney. Literature and further information on request. Write to Tenney Engineering, Inc., Dep't. F, 26 Avenue B, Newark 5, New Jersey.*

No matter how you fit into the picture, you'll benefit with Tenney. Only Tenney brings you the advantages of advanced engineering, of manufacturing facilities that can handle any and every job, of a line that is complete in every detail.

Are you a dealer? You get the benefit of equipment that is engineered and built to win the confidence and approval of your customers—equipment that establishes your reputation for complete dependability.

Are you a jobber? When you handle the Tenney Line of refrigerating equipment, you handle a line unexcelled in variety—a line that enables you to meet every requirement of your customers, no matter how out-of-the-ordinary. And you operate under a franchise that assures you full profits plus the full support of an aggressive, promotion-conscious company.

Are you an engineer? You benefit from the cooperation of a staff of refrigerating engineers who do not only know all the angles, but what makes up the angles as well. You benefit by working with a team of specialists in designing and building equipment for non-routine installations.



## Tenney

Manufacturers of Automatic Temperature,  
Humidity and Pressure Control Equipment 7155



OCTOBER, 1950

VOLUME 7, NO. 10

# Commercial Refrigeration

AND AIR CONDITIONING

Established 1944 as  
THE REFRIGERATION INDUSTRY

THIS MAGAZINE has no  
official affiliation with ANY  
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Room 734  
Superior 7-7823

LOS ANGELES 17  
FRED W. FRISENFELDT  
1250 Wilshire Boulevard  
Room 403  
Tucker 6703

THE COVER . . . This mobile air conditioner, largest ever developed for commercial aircraft, generates cool air at the rate of 2000 cfm for United Air Line's DC-6 Mainliner 300. Designed to permit maximum comfort for passengers during ground halts, it also can deliver 250,000 Btu when adapted as a heater. Ground equipment engineers of the airline worked with Chrysler Airtemp and International Harvester in developing the unit. (Photo from United Airlines)

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NBP

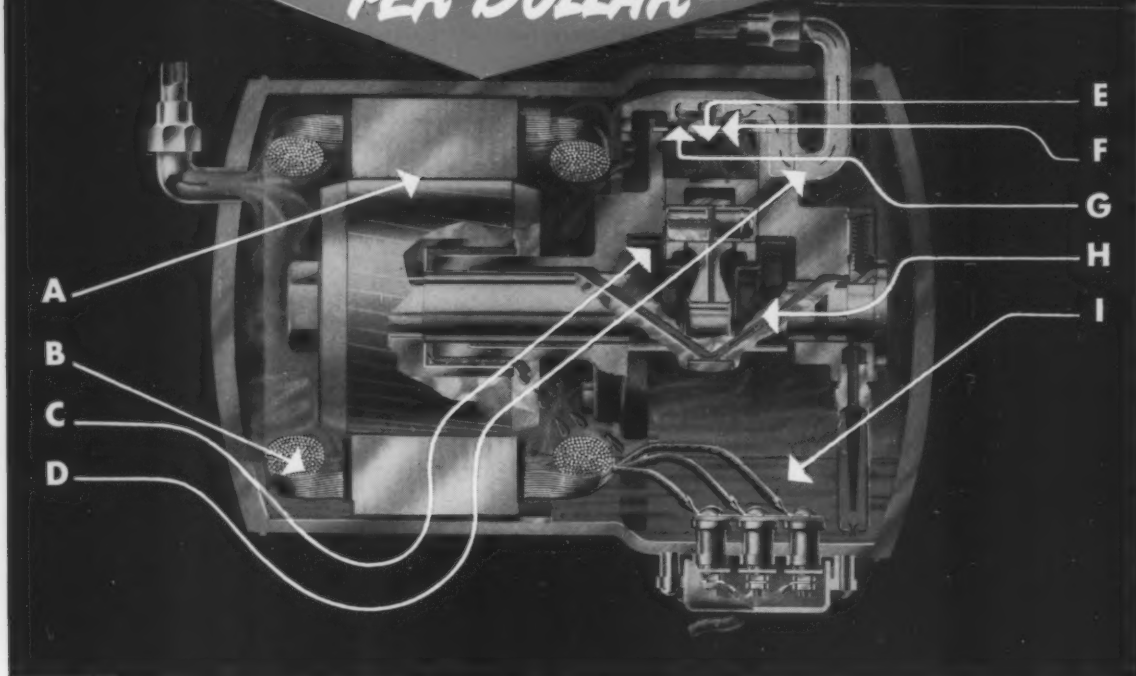
CCA

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Acceptance under Section 34.64, PL&R, authorized at Milwaukee, Wisconsin.

# More Refrigeration PER DOLLAR—



## hermetics

**CHECK THESE IMPORTANT POINTS** in the schematic diagram of the 1-cylinder sealed motor compressor. These features have been G-E designed to assure more refrigeration per dollar through long life, low operating cost and minimum servicing.

### LONG LIFE FOR THE G-E MOTOR, BECAUSE OF

- A.** Suction gas cooling
- B.** Formex wire which is impervious to oil and refrigerant

### RUNS QUIETLY AND SMOOTHLY, BECAUSE OF

- C.** Counterbalanced crankshaft
- D.** Discharge gas muffler cutting noise level

### LESS WASTE PISTON EFFORT, BECAUSE OF

- E.** Low clearance volume
- F.** Thin valve plate
- G.** Large area valve ports

### SURE, CONSTANT OIL SUPPLY TO ALL MOVING PARTS, BECAUSE OF

- H.** Pressure-regulated, forced feed lubrication
- I.** No connecting rod splash—oil stays where it belongs

## 75 G-E PARTS DEPOTS ALL OVER THE U.S....

carry the G-E Condensing Unit line: G-E sealed condensing units in four sizes from  $\frac{1}{8}$  to  $\frac{1}{2}$  HP and replacement parts; G-E open units,  $\frac{1}{4}$  to 10 HP; replacement parts and replacement compressor bodies for G-E open units from  $\frac{1}{4}$  to 75 HP; compressor bodies with flywheels and service valves from  $\frac{1}{8}$  to 10 HP.

**FREE!**  
Data on  
G-E sealed and  
open units

## mail this coupon today!

General Electric Company, Section CR12,  
Air Conditioning Department, Bloomfield, N. J.

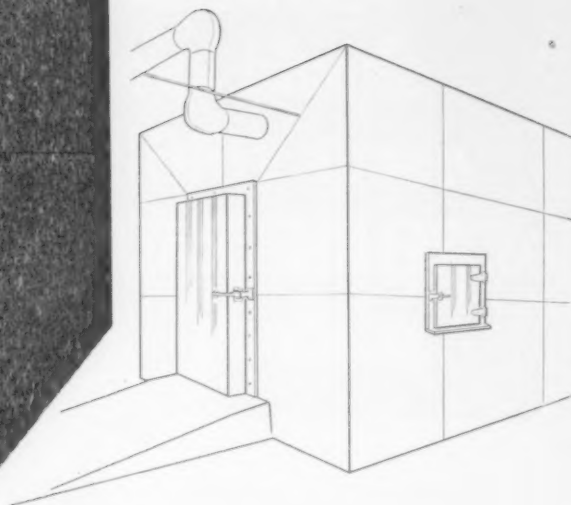
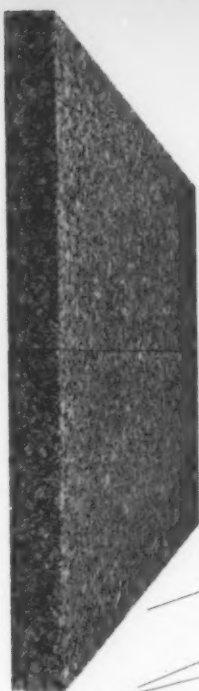
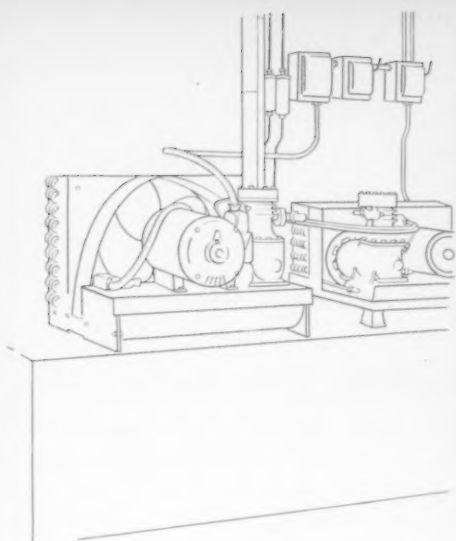
Please send me the following literature:

- ☐ Hermetics Specifications Sheet PM50-0311
- ☐ Condensed Catalog—Open Type units SP-51-1206A
- ☐ Renewal Parts Catalog SP-40-116r/5

I am a service engineer ☐ dealer ☐  
manufacturer ☐ contractor ☐

NAME.....  
COMPANY.....  
ADDRESS.....  
CITY.....ZONE.....STATE.....

**GENERAL**  **ELECTRIC**



## HOW TO AVOID COMPRESSOR OVERLOAD

When you install a compressor for a new cold room, it can handle the refrigeration load easily. But, as time goes on, that load sometimes creeps up and up. Before long, your compressor is running overtime to keep temperatures down. Electric bills go up and service calls become more frequent. Your customer is dissatisfied.

Often the trouble isn't in the mechanical equipment at all but in the insulation around the cold room or walk-in-box. If that insulation has gotten wet, it is letting heat through the construction, and any compressor will have to work overtime to pull the heat out.

The best insurance against this kind of trouble is to insulate the cold room properly in the first place—using moisture-resistant Armstrong's Corkboard Insulation.

You can do a good low-temperature insulation job easily and quickly with corkboard. This efficient material handles easily because it's light in weight, strong, and resilient. It can be sawed and nailed, and its edges stay

sharp so you can get a good, tight fit. Corkboard has high natural moisture resistance and in addition is easy to vapor-seal with hot asphalt. Moisture is effectively sealed out. Finishes bond securely to corkboard. It won't swell, warp, shrink, or settle—won't soak up odor or harbor vermin.

When you install efficient, naturally moisture-resistant corkboard, you give your compressor the best possible chance to perform at top efficiency. It will be able to handle the load with less effort, far into the future.

That kind of performance makes customers happy. Actually—not only on jobs where you install the insulation yourself but also on those where you merely sell the mechanical equipment—it pays you to recommend Armstrong's Corkboard Insulation.

For complete information on Armstrong's Corkboard Insulation, call the Armstrong office nearest you or write direct to Armstrong Cork Company, 5310 Concord Street, Lancaster, Pennsylvania.



# ARMSTRONG CORK COMPANY

*Makers of Armstrong's Corkboard and Cork Covering*

# What the serviceman should know about VIRGINIA REFRIGERATION products

To Charge a System,  
Use Refrigerants  
That Are  
Consistently Pure,  
Consistently Sure...



## "EXTRA DRY ESOTOO" (B. P. +14°F.)

"Extra Dry" is the refrigeration grade  $\text{SO}_2$  that service and maintenance engineers have endorsed for more than 20 years. Comes in all popular cylinder sizes.

## "V-METH-L" (B. P. -10.7°F.)

Virginia Methyl Chloride is made specifically for refrigeration use. Low moisture content, low acidity and narrow boiling range recommend "V-Meth-L" for the most exacting requirements.

## "FREON" REFRIGERANTS

"FREON-11"  
"Boiling Point"  
74.7°F.

"FREON-12"  
"Boiling Point"  
-21.6°F.

"FREON-22"  
"Boiling Point"  
-41.4°F.

"FREON-113"  
"Boiling Point"  
117.6°F.

"FREON-114"  
"Boiling Point"  
38.0°F.

Virginia Smelting Company is distributor  
for Kinetic's "Freon" Refrigerants.

## HOW TO SEAL CASES, INSPECTION PLATES, PIPE OPENINGS

When you seal out moist air, you prevent condensation, corrosion and insulation troubles. The outstanding seal, the one preferred by service and maintenance engineers, is Permagem. Brown Permagem comes in 2½-lb. and 45-lb. slugs. Adheres to any dry surface. Never hardens; stays plastic from 0° to 350°F.; absolutely odorless. Gray white Permagem comes in rolls containing 80 ft. of ⅜" cords. Seals around wiring; won't attack rubber. Never hardens; odorless; can be painted immediately.



## ASK YOUR WHOLESALER OR WRITE VIRGINIA SMELTING COMPANY WEST NORFOLK

PHILADELPHIA • NEW YORK • BOSTON  
CHICAGO • DETROIT • ATLANTA

**VIRGINIA**  
Refrigerants

Open the door to

## PROFIT FROM EXTRA SALES— WITH FRIGIDAIRE DOOR SEALS!

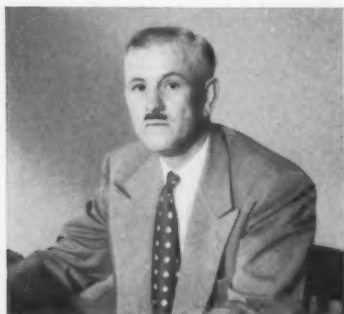
A profit source you may have overlooked is the sale of Frigidaire Refrigerator Door Seals. Most people don't think about a new seal until the old one is worn out. But a few words from you about the dangers of improper sealing—stressing ex-

cessive current cost, frosting, sweating, etc., can often bring about the sale of a new Frigidaire Door Seal. These sales are not only profitable in dollars and cents, but they also build valuable customer good will for your business.



### **Depends On Frigidaire Parts!**

"We use genuine Frigidaire Parts for replacement because our past experience has shown us they can be depended on for top-grade performance," says Q. E. Hollenberg, Barth & Levy, Inc., Fort Wayne, Indiana.



### **Credits Frigidaire Parts For Steady Business Increase!**

"Frigidaire Parts represent the finest quality we can give our customers," says Ted Weeks, owner of Ted Weeks Refrigeration Company, Kansas City, Mo. "We attribute much of our steady increase in business to these parts."



### **Use Frigidaire Door Seals For Precision Fit!**

Frigidaire Door Seals are easily and quickly installed—save time and trouble because they're an exact fit. Used for reconditioning old refrigerators, they give a factory-made appearance to the job.

Frigidaire Door Seals are made of the

finest rubber obtainable, carefully compounded to strict Frigidaire specifications for flexibility and long life. Your nearby Frigidaire Parts Distributor can furnish top quality door seals to fit Frigidaire models for many years back.



### **Promotes Customer Good Will!**

"By reducing costly call-backs and enabling us to give one-call service, Frigidaire Parts are essential in promoting the good will of our customers," says R. A. Nitschke, White Refrigeration Co., Great Falls, Mont.

### **FREE! Frigidaire Parts Catalog**

For full information about all Frigidaire Service Parts and Accessories, write today for your free Frigidaire Parts Catalog.



## FRIGIDAIRE Service Parts and Accessories



FRIGIDAIRE DIVISION  
GENERAL MOTORS CORPORATION  
1481 Amelia Street, Dayton, O.  
(In Canada, Leaside 12, Ont.)

Please rush my free copy of your 1950 parts catalog—"Genuine Precision-Built Frigidaire Parts and Accessories."

Name.....

Firm Name.....

Address.....

City.....County.....State.....



you get  
**double  
 protection**  
 against moisture with

**DRYSEAL**  
 REFRIGERATION TUBE



● Moisture hasn't a chance against Dryseal. It's double crimped that's why. A special, precise, mechanical double-crimp seal made at each end of the tube when it is manufactured keeps the inside dry as a bone and free from dirt. And, because of the way the seal is made, the diameter of the tube does not change. This permits it to pass through any opening large enough for the tube itself.

Dryseal is easy as pie to handle. Being dead-soft it

is easily bent with the hands. It is this same soft temper, and the ductility of the copper used, that makes Dryseal easy to flare for compression fittings without any danger of splitting. Economical tube sizes range from  $\frac{1}{8}$ " to  $\frac{3}{4}$ " O.D.

And, for your greater convenience we have just recently brought out Dryseal in a nifty-50 one-coil carton. This carton, which has been attractively designed for easy identification in stock, contains one 50-foot coil of Dryseal... is easier to handle, light weight, economical.

**NOW in the  
 NIFTY-50  
 one-coil  
 carton!**



**REVERE**

**COPPER AND BRASS INCORPORATED**

Founded by Paul Revere in 1801  
 230 Park Avenue, New York 17, New York

Mills: Baltimore, Md.; Chicago and Clinton, Ill.; Detroit, Mich.;  
 Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.  
 Sales Offices in Principal Cities, Distributors Everywhere.

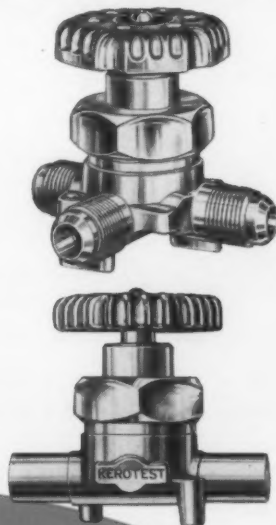
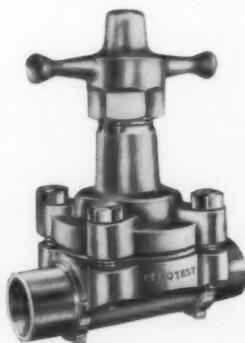
**GIVES YOU  
ANOTHER  
MONEY-MAKER.**



### READ THESE FEATURES

- **More drying agent at the same or lower price!**
- **Only 6 models fit everywhere!**
- **All ratings from 1/4 HP to 2 HP!**
- **Standard dimensions that fit everywhere!**
- **UL approved!**

**QUALIFIES WITH  
100 PIECE PURCHASES!**



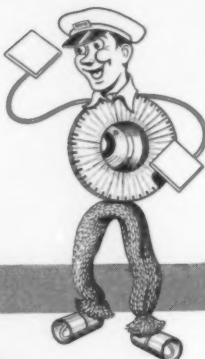
**Again in '50  
KEROTEST HAS THE PRODUCTS**

**KEROTEST MANUFACTURING COMPANY, PITTSBURGH 22, PENNSYLVANIA**

<b>OFFICES AND WAREHOUSES:</b>	New York City	Chicago	Los Angeles	San Francisco	Houston	Dallas	Tulsa
	Odessa, Texas	Richmond	Atlanta	Toledo	St. Louis	Charleston, W. Va.	

**Genuine Joe Says:**

when new  
capacitors are  
needed...  
replace with  
*genuine*  
Wagner  
Capacitors



**Play Safe...**

Always use genuine Wagner Motor Starting Capacitors for replacements. You are assured of the same high quality as the original capacitor and you don't risk your reputation with a capacitor that is "just as good" in everything but performance.

The capacitor model number, stamped on Wagner Motor nameplates, furnishes an easy and accurate method of selecting the *right* capacitor every time.

Write for Wagner's new Fast-Moving Parts Bulletin, MU-122, and for Motor Parts Catalog MU-40. They will help you in your work.



**WAGNER ELECTRIC CORPORATION**  
6442 Plymouth Ave., St. Louis 14, Mo., U. S. A.

MOTORS • BEARINGS • STANDARD ROTORS  
BRUSHES • CAPACITORS • COMMUTATORS

**450 AUTHORIZED SERVICE STATIONS  
OR PARTS DISTRIBUTORS**

## LETTERS

### Finds Sales Slants Helpful

EDITOR:

In your July, 1950 issue of **COMMERCIAL REFRIGERATION AND AIR CONDITIONING** you published No. 5 in a series of "Sales Slants on Air-Conditioning" by Leonard F. Auerbach, which I thought was very good and was wondering if it would be possible to get that whole series.

I am a Sales Engineer for a Frigidaire commercial air conditioning dealer and I believe the information would be of great value to me.

Thanking you in advance, I remain—  
Lee Neisler, Sales Engineer, Dry-Kold Refrigeration Co., Evanston, Ill.

### Trade School Needs Wall Charts for Classroom Use

EDITOR:

We operate a G. I. Trade School in refrigeration and air conditioning, and would appreciate any material that you might be able to send us.

We need the following material: wall charts, and "exploded" sketches of such items of equipment as expansion valves, blower coils, water cooling towers, etc.

Any of the above that you can obtain for us will be appreciated.—L. B. Sharp, Mississippi School of Refrigeration, 230 Yeager St., Jackson, Miss.

*Will manufacturers who have wall charts, product sketches, etc. available for uses such as Mr. Yeager outline please send them to him?*

### Gray Meat Causes Gray Hair for Reader

EDITOR:

We have a problem with a Fleetwood double-duty showcase 12 feet long with a Servel ½-hp Freon unit with control set at 12 to 36 pounds which gives very good temperatures but fresh cut meats turn gray. Lower coil and upper coil each has its own Sporlan ½-ton valve and both coils are active.

The factory man has looked this job over and states he is puzzled. He said they made six of these cases and this is the only one they have had trouble with.

We also kept the lights out on this job for two weeks.

What could be causing meat to turn gray?—George R. Hendrickson, North Arlington, N. J.

*Seeking first-hand information on this subject, we passed this inquiry on to the Research Laboratories of*



**MODEL 1407.** Self-service frozen food display case. Attracts and handles more buyers, invites more sales.



**MODEL 306.** The sensational open case with THREE refrigerated shelves. For profit-making impulse sales.



**MODEL 6710.** 10-ft. long open front case with extra width display section. Ideal for produce display.



**MODEL 5710.** Open front self-service case for pre-packaged fresh meats, produce, or dairy products.

ENDLESS DISPLAY

ENDLESS APPEAL

ENDLESS PROFITS

# NDLESS



Set 'em up and start selling! Koch Series 3100 Top Display Cases come in basic 7-ft. and 10-ft. units. Set up in any length to provide an integral, unified, money-making display.

**QUALITY** — Full porcelain front, top, rear, ends, and interior walls. All welded steel construction. Stainless steel floor. Triple plate-glass front is hermetically sealed.

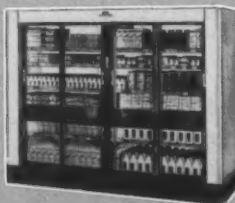
**APPEAL** — Triple-glazed Loxit type sliding doors in molded hard rubber frames. Continuous K-Beam fluorescent lighting. Electro-welded steel shelves are adjustable to 3 positions. Fully lined, non-refrigerated storage compartment.

**LONG LIFE** — Famous, patented, KOCH Miraflex twin-coil cooling system. Insures consistent, trouble-free, economical operation.

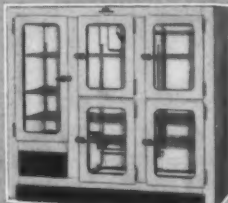
## KOCH REFRIGERATORS

NORTH KANSAS CITY 16, MO.

THE QUALITY REFRIGERATOR LINE SINCE 1883



**MODEL 3508.** Wall Type Display Case. For self-service display of dairy products or beverages.



**MODEL 3865.** A 43-cu. ft. reach-in refrigerator. One of the six popular Koch reach-in cabinets.

KOCH REFRIGERATORS  
North Kansas City 16, Mo.

CR-10

Please send me at once, without obligation, complete information on profit-making Koch Display Cases and Refrigerators.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_



# AUTO-LITE TEMPERATURE RECORDERS



## Guard the Vital Spots

Freezer & locker rooms  
Overflow & bulk storage  
Processing & chill rooms  
Air conditioning  
Cold storage  
Smoke houses

*For Profits and Protection!*

Stop waste and spoilage . . . avoid doubt and argument. Here's proof of temperature behavior! These precision built recorders give low-cost protection, due to Auto-Lite's specialized manufacturing. Three standard

recorder types...7 day or 24 hr. operating cycle. Wide selection of chart ranges between minus 40° and plus 550° F. Send for illustrated catalog showing wide variety of Auto-Lite Temperature Recorders and Indicators.

Auto-Lite Pressure, Vacuum and Compound Recorders are also available with 6" twenty-four hour chart.

**THE ELECTRIC AUTO-LITE COMPANY**  
INSTRUMENT AND GAUGE DIVISION  
TOLEDO 1, OHIO  
NEW YORK • CHICAGO • SARNIA, ONTARIO

THE ELECTRIC AUTO-LITE CO.,  
Instrument and Gauge Division,  
Toledo 1, Ohio

Please send your illustrated catalog, describing the various styles and types of Auto-Lite Indicating and Recording Thermometers.

NAME .....

COMPANY .....

ADDRESS ..... R-10  
(Indicate purpose for which thermometers are required.)

## LETTERS

Swift & Co. and received the following reply:

"Your letter did not specifically state whether the display case in question was a closed service style case or an open self-service display case.

"In the service display case used for unwrapped fresh meat cuts, graying of the meat surface is usually due to high humidities plus high temperatures. This condition occurs more rapidly on aged than on fresh meat. Ordinary display case light does not induce discoloration in fresh meat. If, as reported, the temperature is below 38-40 F, the relative humidity is between 75 and 85%, and proper lighting is maintained, then I cannot explain any gray discoloration in a three day exposure in a display case.

"In an open self-service display case, packaged fresh meat may discolor due to use of wrapping material that is too moisture-proof and not sufficiently permeable to oxygen."

Have any of our readers encountered any similar situations which might throw some light on this problem? If so, we should appreciate hearing from them.

### Reader Seeks Crusher For Ice Cubes

EDITOR:

Please advise of a manufacturer of power ice cube crusher for bars and clubs. We are unable to locate such a machine.—Wilbur A. Harter, Harter Hardware Co., Wapwallopen, Pa.

One manufacturer of this type of equipment is Wingate Mfg. Co., Charlotte, N. C., and another is Gary Mfg. Co., 4500 S. Main St., Los Angeles 37, Calif.

We also know that most of the companies who make automatic ice cube makers (Carrier, York, Vilter, for example) also provide auxiliary ice crushing equipment, if desired.

### Want to Work In Panama?

EDITOR:

The office of The Panama Canal advises that there is a vacancy in the position of Mechanical Engineer, Refrigeration, for



"All motors are NOT alike!"

Check these

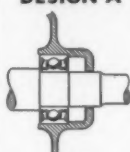
# 15 Reasons Why

the **RELIANCE** Bearing Design

is the **BEST** one!

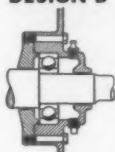
ONLY  
ONE MOTOR  
HAS ALL THESE  
DESIGN  
FEATURES:

DESIGN A



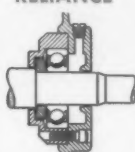
Prelubricated  
cartridge—  
bearing mounted  
in bracket

DESIGN B



Open bearing  
mounted in  
bracket

RELIANCE



Double-shielded,  
prelubricated  
bearing mounted  
in bearing cap

Bearing sealed from dirt and other foreign material	YES	NO	YES
Enclosed bearing housing	NO	YES	YES
Bearing can be re-lubricated without being disassembled	NO	YES	YES
Motor can be re-greased without removing drain plug	**	NO	YES
Automatic grease relief to suit any lubrication system	NO	NO	YES
Protection against grease entering windings	YES	*YES	YES
Balls free of direct pressure during lubrication	YES	NO	YES
Bearing can be removed without danger of distortion	NO	NO	YES
Reservoir to protect against under-greasing	NO	YES	YES
Standard commercial ball bearings	YES	YES	YES
Larger grease reserve than provided with any standard bearing	NO	YES	YES
Grease supply free of churning action	NO	NO	YES
Measuring unnecessary to prevent overgreasing	NO	*YES	YES
Unnecessary to grease equally at each side of ball race	NO	YES	YES
Lubricant is retained in ball race	YES	NO	YES

\*\* Means is not provided for relubrication of assembled motor.

\*YES, if drain plug is removed.

The Reliance Pre-lubricated Bearing Design has all of the features vital to maximum motor life. Check these points in the chart at left. The performance of Reliance PRECISION-BUILT Motors in all industries and under all operating conditions has proved their value in long-wearing, trouble-free bearing design.

In most applications, Reliance PRECISION-BUILT Motors operate satisfactorily for years without relubrication. Where it is a practice to grease regularly or where operating conditions make it desirable . . . it is impossible to overgrease a Reliance Motor. Write for new Bulletin B-2201 for the "inside story" of the Reliance Pre-lubricated Bearing Design.



Reliance PRECISION-BUILT A-c. Motors  
from 1/4 to 300 Hp.

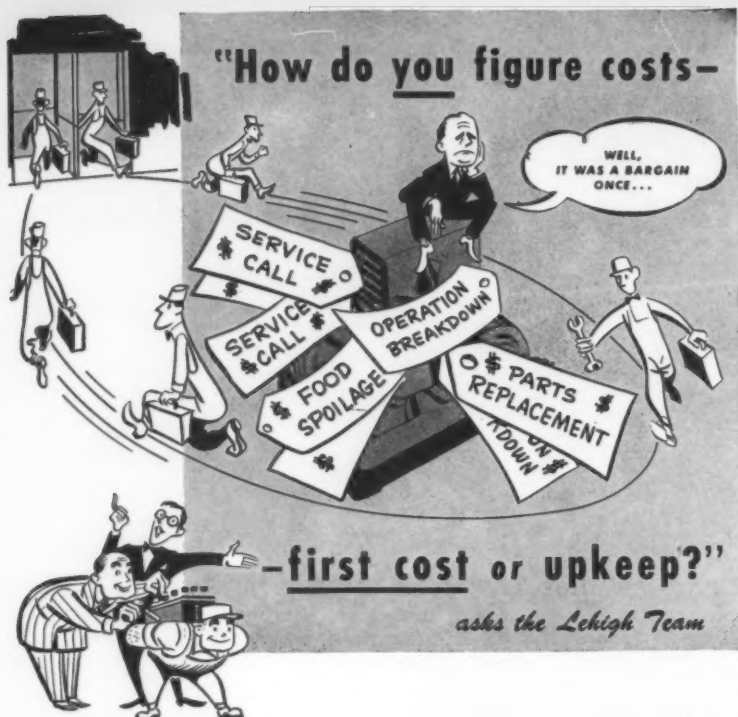


Sales Representatives in Principal Cities

# RELIANCE ELECTRIC AND ENGINEERING CO.

"All Motors are NOT Alike"

• 1113 Ivanhoe Road, Cleveland 10, Ohio



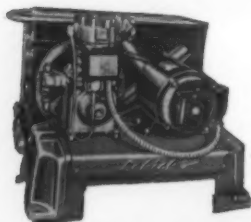
## BLU-COLD performance is showing buyers how to make that inflated dollar **BUY MORE!**

The man who first said "You'll remember the quality long after the price is forgotten" is hereby elected an honorary member of the Lehigh Team! Today, with well over a hundred thousand **BLU-COLD** units of all sizes in operation, the Lehigh Team can say without fear of contradiction "We talked quality—we stressed honest ratings—we pointed to performance—and the records back us!" **Now**—when your dollars have to buy the **MOST**—it pays to buy the **BEST**.

### A Complete Line of Condensing Units from ¼ H.P. to 5 H.P.

- ★ Packaged Air Cooled—¼ H.P. thru ½ H.P.
- ★ Heavy Duty Air Cooled—½ H.P. thru 3 H.P.
- ★ Water Cooled—½ H.P. thru 5 H.P.
- ★ Truck Units—¾ H.P. thru 2 H.P.
- ★ Combination Air and Water Cooled—½ H.P. thru 3 H.P.
- ★ Automatic High Side Defrost Units
- ★ Units for Evaporative Condensers
- ★ Water Cooled Condensers
- ★ Gasoline Engine Driven Units
- ★ Units for Specific Uses
- ★ Bare Compressors

Write For New Catalog and Price List



Lehigh BLU-COLD  
½ H.P.  
Air Cooled  
Heavy Duty Unit



Export Department—39 Broadway, New York 6, N. Y.

## Lehigh Manufacturing Co.

PLANT: LANCASTER, PA.

## LETTERS

duty in the Panama Canal service on the Isthmus of Panama. This position is in Grade GS-9 at a salary of \$5,750 per annum, and on a 40-hour week basis.

The services of a suitable applicant are urgently needed in order that the present engineer may have the longest possible time for training this replacement prior to the incumbent's entry into military service. Free transportation to the Canal Zone is provided the appointee and his immediate family, as well as for his household goods and personal effects.

Applicants must have completed a 4-year course in recognized school with major work in the field of mechanical engineering and special emphasis upon a course in refrigeration; not less than one year's graduate study in acceptable research work; and three years' professional experience. They must also be American citizens in good physical condition, and not over 45 years of age, this requirement being waived up to 62 years for persons entitled to veterans' preference.

Those interested are urged to communicate with the "Chief of Office, The Panama Canal, Washington 25, D. C.," for further details and application blanks.—B. F. Burdick, Chief of Office, The Panama Canal.

### Auto Air Conditioner Made In Dallas

EDITOR:

We are desirous of obtaining information concerning the manufacturers and distributors of automobile air conditioners.

Recently I ran across a manufacturer in Dallas, Texas, who I believe had developed an ideal car air conditioner. At this moment I cannot recall the name or the address of the company.

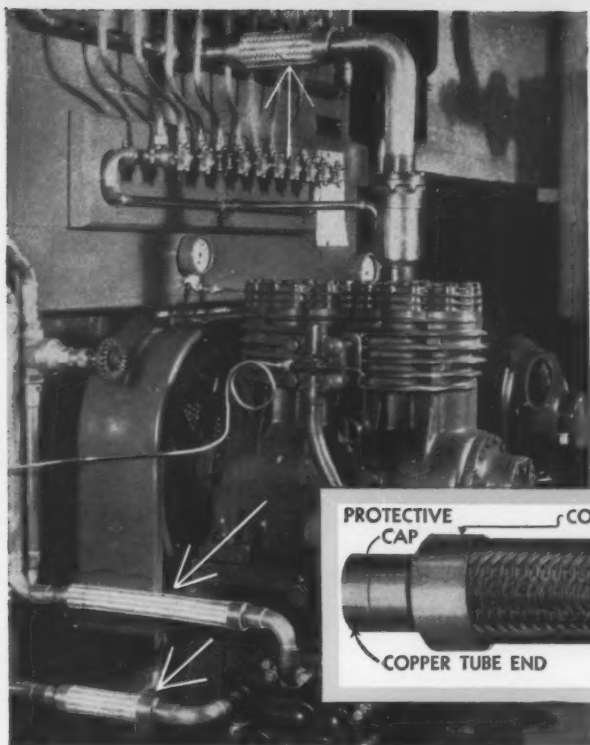
Please forward me all information concerning the above at your earliest convenience.—John E. Faust, Supreme Sales Co., St. Louis, Mo.

EDITOR:

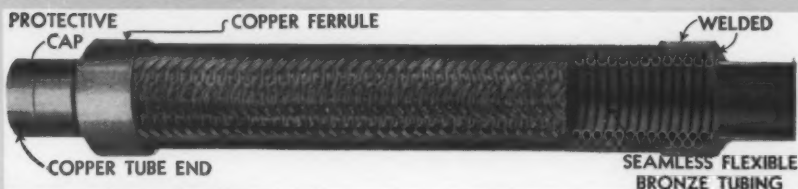
I would like to know if, from your thorough acquaintance with the refrigeration field, you could tell me whether any refrigerator equipment supplier produces condensing unit cooling systems for passenger automobiles.—Arnold C. Melheim, Washington, D. C.

The company is Frigikar Corporation, Box 686, Dallas, Texas. The unit produced by this company has a rating, at varying speeds, of from 1½ to 2 tons, and is powered by a Freon-12 compressor built by Servel.

**BUY FROM YOUR  
REFRIGERATION WHOLESALER**



*it's the sign of  
a vibration-free job . . .*



## it's an *American* Vibration Eliminator

**C**OMPRESSOR VIBRATION and noise is muffled plenty in a line equipped with an American Vibration Eliminator. What's more, the line that absorbs vibration is far less apt to fail from fatigue.

An American Vibration Eliminator is the finest product of its kind. The corrugated bronze tubing is *seamless*. Copper ferrules and tube ends are *bronze welded*. Each unit is pressure-tested under water, is spotlessly clean and dry, with ends firmly sealed. Individual packages are clearly marked. You get the best when you buy "American."

*It's also the best refrigeration engineering practice to*

use ANACONDA Copper Refrigeration Tube. This uniformly soft copper tubing that bends and flares easily is mirror-smooth with a clean, bright interior that makes solid seats. It's dehydrated even beyond A. S. R. E. requirements; cup-sealed for complete protection and minimum waste.



*Your jobber handles American Vibration Eliminators and ANACONDA Copper Refrigeration Tube. Ask him about them today. The American Brass Company, Waterbury 20, Connecticut. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.*

*For dependability . . . use* **ANACONDA®**

**REFRIGERATION TUBE and  
AMERICAN VIBRATION ELIMINATORS**

your wholesaler can  
do the whole job  
with **SUPERIOR**



You'll find that your next refrigeration or air conditioning job will run smoother and last longer if you let your wholesaler supply you with a complete line of Superior valves and accessories.

Many others have found that Superior-engineered products save them time and money in installation and repair costs when they are used as initial equipment on the job. Globe valves, Line valves, Economizers, Driers, Sight Glasses and a host of quality Superior products are made in a number of types and sizes assuring good performance in any size refrigeration system. Remember always to specify Superior for all your new equipment and replacement parts—and let your local wholesaler do the entire supply job.

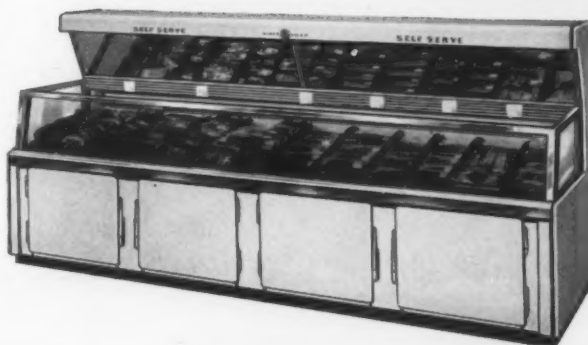
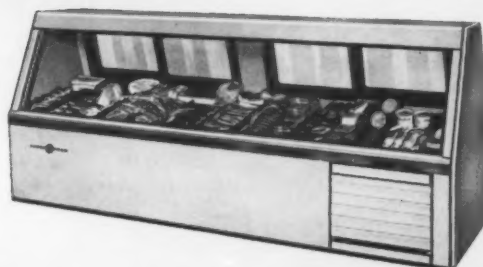
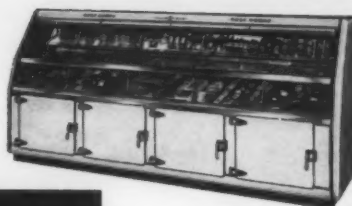
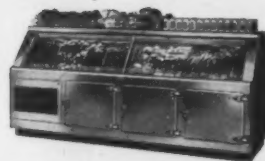
**Superior** *valve and fittings co.*



Pittsburgh 26, Pa.

# SELL THE LINE THAT STAYS SOLD

Sell the line that is years ahead in profit-wise style and construction, the line that includes so many practical features that it will not only sell easier—but will stay sold, because Super-Cold cases make a profit for your customer right from the start. Don't sell 'em less than a Super-Cold. Write for full details now.



**SUPER**

**COLD**

## HERE ARE THE THINGS THAT MAKE SALES

**Progress**—Again and again Super-Cold is out in front with sales designed, dependably engineered commercial refrigeration.

**Experience**—Super-Cold has manufactured commercial refrigeration exclusively for over 25 years and has pioneered many major improvements in the industry.

**Sales Aids**—The Super-Cold Corp. offers complete merchandising and sales training techniques gained in 25 years of successful retailing experience, and backs you with advertising in national trade magazines to your customers.

**Liberal Franchise**—Super-Cold allows you high profit, with advertising sales material support and cooperative assistance to make your job easier. Clip the coupon to your letterhead and mail it today. Complete information will be sent to you immediately.

**THE SUPER-COLD CORP.**  
1020 EAST FIFTY-NINTH STREET • LOS ANGELES 54, CALIFORNIA

NOTE: Inquiries from out of U.S.A. should be addressed to: International Division, or use Cable Address, "Supercold."



**SUPER-COLD**  
*Refrigeration*

COMPLETE FOOD STORE REFRIGERATION UNDER ONE GREAT NAME

The Super-Cold Corporation  
1020 E. 59th St., Los Angeles 54, Calif.

Gentlemen:

Please furnish me with details on your new Super-Cold franchise.

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_



# MORE FOR LESS!

## Kay-Tee UNIT COOLERS by **KRAMER**

**OFFER MORE BTU'S FOR LESS MONEY.** These savings are the results of extensive engineering and the development of a newly patented KRAMER coil construction (Pat. No. 2,462,511). The traditionally high standards of KRAMER quality are maintained.

**GUARANTEED RATINGS** are based on tests made in accordance with accepted standards.

**BUILT-IN HEAT EXCHANGERS** are an integral part of all units.

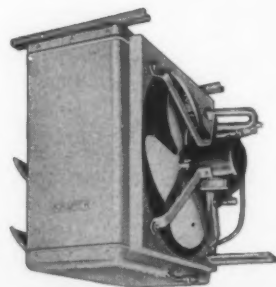
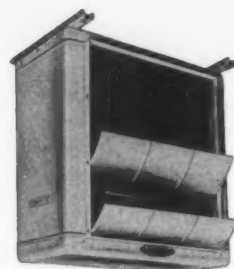
**FEELER BULB LOOP** extending outside the case, facilitates easy mounting of the feeler bulb between the coil and heat exchanger.

**NO RUSTING** with all aluminum cases.

**DIE STAMPED** handsome cases.

**TWO ADJUSTABLE LOUVERS** permit diffusion of the air stream.

**STANDARD EXPANSION VALVES** can be used. Units are designed for normal pressure drop, external equalizers are not required.

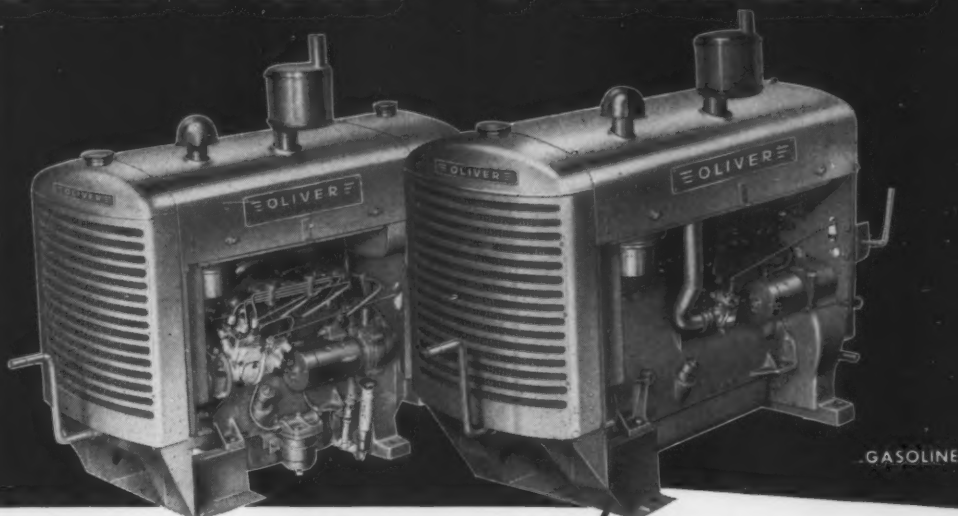


Write for Bulletin KT180

### KRAMER TRENTON CO. *Trenton 5, N. J.*

THERMOBANK - COOLMASTER - RADIAL UNITS - PANEL UNITS - CUBERS - FINNED COILS - BARE TUBE COILS - HEAT INTERCHANGERS -  
CONDENSERS Air Cooled, Water Cooled, Evaporative - WATER COOLING EVAPORATORS - BLAST COOLING COILS - BLAST HEATING COILS

# New! Efficient, Economical OLIVER POWER!



## ... in 2 Engine Types and 3 Classes!

There's a choice of two engines of distinct fuel types in the new Oliver stationary unit line-up—and each is available in three power groups! You can pick either the gasoline or diesel engine—the "166", the "177" or the "188"—depending upon your requirements and conditions.

Combined with the already proved advancements of the great Oliver tractor engine—*controlled pressure lubrication, valve-in-head design, removable wet sleeves, by-pass cooling system, precision-type bearings*—are modern stationary power features that make these new units top performers on a multitude of jobs.

There's smoothness here, even through sudden

Oliver diesel and gasoline engines are available in three sizes—the 4-cylinder "166" developing up to 32 h.p., maximum; the 6-cylinder "177" delivering up to 47 h.p., maximum; and the 6-cylinder "188" which develops up to 56 h.p., maximum. Offered as a bare engine, or open or closed power units with a variety of attachments for special uses.

load variations . . . and extra "lugging" ability when the pull gets heavy. An Oliver engine provides persistent, unfaltering power for year-round duty on pumps, hoists, hammer mills, concrete mixers, electric generators and similar equipment on the farm and ranch . . . on rock crushers, conveyors and construction machines of various types . . . for refrigeration plants and all sorts of allied agricultural industries. Whatever your power application, consult your Oliver dealer *first!* The OLIVER Corporation, 400 West Madison Street, Chicago 6, Illinois.



# OLIVER

"FINEST IN FARM MACHINERY"

The Oliver Corporation  
400 West Madison Street, Chicago 6, Illinois.  
Please send literature on Oliver diesel engines ( ),  
on Oliver gasoline engines ( ).

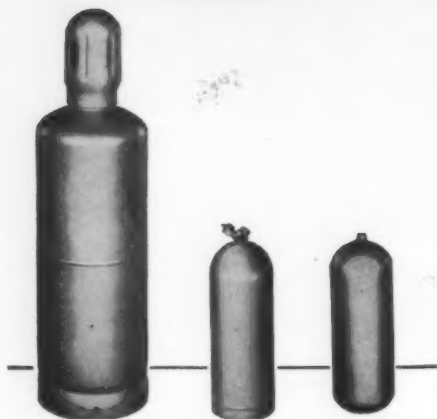
Name.....

Post Office.....

RR.....County.....State.....

I want to power a.....

T15-10



PREST-O-LITE cold-drawn cylinders for refrigerant gases are available in 5-lb. (rounded bottom or with foot ring), 10-lb., 25-lb., and 35-lb. sizes. You can have 50-lb., 100-lb., 150-lb., or special sizes and designs quickly made to your specifications.

You save money in the long run when you insist on the best cylinders. Fill in the coupon below and mail it today for more information about PREST-O-LITE cylinders that will meet your needs.

## For Refrigerant Gases Because You Get...

- ① **Uniform Wall Thickness**—Unusually close tolerances in wall thickness assure you a superior cylinder.
- ② **Long Life**—Years of extra service and added protection against denting, piercing, corrosion, and pitting result from the thicker walls and rugged construction.
- ③ **Light Weight**—You cut transportation costs because there are no extra-thick sections which only add weight without adding strength.
- ④ **Maximum Safety**—All cylinders are tested for leakage with dry air, in addition to standard safety tests.
- ⑤ **Benefit of Years of Experience**—Unsurpassed design and production come from more than 35 years of experience and skill in the development, manufacture and use of compressed gas cylinders.
- ⑥ **More Than Code Requirements**—You know PREST-O-LITE cylinders will never let you down because they're made, tested, and inspected not only in accordance with I.C.C. Specifications but also undergo many rigid tests far beyond these requirements.

### THE LINDE AIR PRODUCTS COMPANY

*Unit of Union Carbide and Carbon Corporation*

30 East 42nd Street **UCC** New York 17, N. Y.

Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The term "Prest-O-Lite" is a registered trademark of The Linde Air Products Company.

THE LINDE AIR PRODUCTS COMPANY  
30 East 42nd Street  
New York 17, N. Y.

R-7

Please send literature and full information about PREST-O-LITE cylinders for refrigerant gases.

NAME .....

COMPANY .....

ADDRESS .....

**MAIL THIS  
COUPON  
NOW!**

# Drier THAN THE SAHARA

## ANSUL Refrigerants

### ANSUL OIL



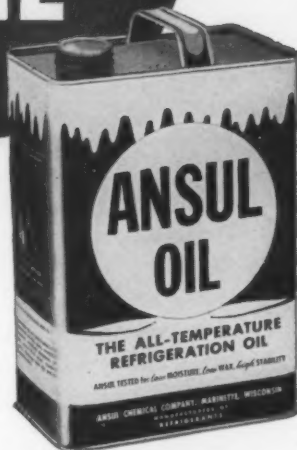
Reg. U.S. Pat. Off.



**D**RYNESS is a critical requirement in the specifications of ANSUL Refrigerants and ANSUL Refrigeration Oils. To safeguard the dryness of Ansul Refrigeration Products, specially designed container-drying and product-dehydrating equipment is used to eliminate the last trace of moisture.

Moisture in refrigeration systems results in the formation of ice, rust, sludges, and contributes to the development of other impurities and complications. These seriously interfere with the proper operation of a refrigeration system.

ANSUL Technicians have prepared a series of bulletins on the effects of moisture and other foreign matter in refrigeration systems. Copies may be obtained from ANSUL wholesalers or by writing directly to Ansul Research.



#### ANSUL 150 OIL —

The All-Temperature Refrigeration Oil — is sold by leading refrigeration wholesalers everywhere. (If you require a higher viscosity oil ask for ANSUL 300.)

# ANSUL

## CHEMICAL COMPANY

REFRIGERATION DIVISION, MARINETTE, WISCONSIN

ANSUL SULFUR DIOXIDE, ANSUL METHYL CHLORIDE, ANSUL OIL, KINETIC'S "FREONS"

# new

## here's low-cost protection for PRESSURE-LUBRICATED COMPRESSORS

Low lube oil pressure . . . or slow pickup of oil pressure at the start of a cycle can happen in the best of pressure-lubricated refrigeration compressors. And when it does . . . damage to seals and bearings may result. But, you don't have to take this gamble anymore!

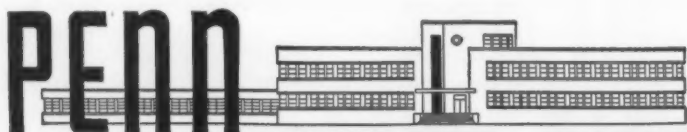
Now . . . for the first time . . . you can have life-time protection against such compressor breakdowns with the new PENN Series 275 Oil Protection Control with built-in Time Delay Switch.

Then, when the compressor starts, if the oil pressure does not build up to the proper point within a safe time period, the PENN 275 stops the compressor *automatically* before damage can occur. If oil pressure drops below a safe minimum during the running cycle . . . and does not rise to normal within the time delay period . . . the control shuts off compressor operation.



Thus, the compressor never operates more than the predetermined safe time on subnormal oil pressure. Result? Positive, automatic protection at all times!

Investigate this new, low-cost protection for refrigeration compressors or for other pressure-lubricated equipment. For complete information ask your compressor manufacturer or wholesaler or write **Penn Electric Switch Co., Goshen, Indiana**. Export Division: 13 E. 40th St., New York 16, U. S. A. In Canada: Penn Controls, Ltd., Toronto, Ont.



### AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, PUMPS, AIR COMPRESSORS, ENGINES, GAS RANGES



**REFRIGERATION IN INDUSTRY DUE FOR EXPANSION . . .** Among interesting developments anticipated in the use of air conditioning in industry within the next decade are dry blast systems for reducing moisture content in the air used in producing pig iron and steel and making steel and non-ferrous castings. These systems can cut coke consumption, increase blast furnace productivity, and assure more uniform production of various metal products.

**PRE-PACKAGING CALLS FOR REFRIGERATION . . .** Studies made during the past two years by U. S. Dept. of Agriculture in cooperation with the Dickman Farms, Ruskin, Fla., highlight the importance of adequate refrigeration of fruits and vegetables at every step along the way from the time the produce is harvested until it is sold to the consumer. For example, packaged broccoli remained a good green color for 15 to 20 days when held at 40 F, but turned yellow in 2 or 3 days at 70 F. Sweet corn lost sugar content at the rates of 3.5 per cent at 32 F, 20.8 per cent at 50 F and 59.4 per cent at 86 F during the first 24 hours after picking. If the prepackaging industry is to grow, wholesale and retail food dealers need to expand their refrigeration facilities to adequately handle the most perishable lines of produce, USDA men point out.

**STORE EGGS AT 50 F. FOR BETTER HATCHES . . .** The best storage temperature for hatching eggs is 50 F, according to recent tests conducted at the Beltsville Research Center by the U. S. Dept. of Agriculture. Today only about 70 out of every 100 eggs placed in commercial incubators actually hatch—and improper temperatures during the holding periods before incubation is believed to be a major contributor toward poor hatches.

**KEEP COMFORTABLE AND YOU'LL LIVE LONGER . . .** Dr. C. A. Mills, the University of Cincinnati's expert in the relationship of climate and mankind, declares that the importance of temperature to man, beyond his hour-to-hour comfort, is such that "neither individual nor nation can develop innate potentialities to the full" without favorable temperatures. Some day, perhaps, air conditioning will provide all of us with the "golden mean".

**LOOK TO CITIES FOR FREEZER SALES . . .** A vast untapped market for home freezers lies just around the corner in urban areas, in the opinion of one freezer sales executive. Public acceptance of home freezers is not limited so much to rural markets, this executive opines, as seems to be the general misconception in the trade. His reason for predicting a high future level of urban sales, briefly and logically expressed, are: (1) Sales of frozen foods are increasing, and statistics now show that 75% of Americans use frozen food at one time or another; (2) Obviously, most commercially packed frozen food is consumed by urban families, since rural people generally prepare their own; (3) Increased demand for frozen food makes people freezer-conscious; (4) Cost of freezers is dropping, especially in relation to cost per cubic foot; and (5) Manufacturers of frozen food processes and producers are conducting an aggressive advertising program to popularize both frozen foods and the use of home freezers.

# "DR. OF BUSINESS" DIAGNOSES CUSTOMERS' PROFIT AILMENTS

**T**HERE'S more to selling than just getting an order signed, and customer service—in the fullest sense of the term—is one solid stepping stone to success in today's highly competitive commercial refrigeration merchandising field, believes Frank Ludwig.

As head of Ludwig-Patterson Co., one of the most aggressive commercial refrigeration firms in the Rocky Mountain area, Ludwig has put his ideas to the test in building business for his Denver, Colo., company. They have not been found wanting. During

the past nine years the organization has grown until it now boasts a staff of nearly 50 employees.

The firm's five outside specialty salesmen and three sales engineers combine their talents to merchandise a constantly growing volume of equipment to commercial refrigeration users in its trading area. In addition, the company offers a complete store engineering service and maintains facilities for building all types of special fixtures and accessories.

In most of its installations, Ludwig-

Patterson religiously photographs the job "before and after" and makes up a graphically detailed case history which dramatically shows the increase in profits earned by the store after proper refrigeration was installed. As a result of this practice, there is seldom any type of installation problem encountered for which Ludwig-Patterson does not have a "prescription" already worked out with an actual case history to back up its claims.

Most storekeepers, after being called upon several times by Ludwig-

Frank Ludwig's "prescriptions" gain the confidence—and the business—of such important customers as these



This fountain installation in the Mayfair drug store and the impressive lineup of cases in the Miller meat market testify to the effectiveness of this Denver dealer's belief in complete customer service.

Patterson salesmen, are pleasantly surprised to realize that the sale of refrigeration equipment is handled as incidental to lifting the store into a more profitable bracket. Each of the firm's five outside salesmen has his own territory, makes a lot of callbacks, and is continuously "prospecting" with the idea of helping the stores which he contacts to earn a better return.

Consistently hammering away at this idea, with plenty of direct mail, and actual instances to demonstrate each point, invariably gets results, Ludwig-Patterson has found.

### Produce Cooling Offers "Biggest Opportunity"

Biggest opportunity in the commercial cooling market today, the company has found, lies in produce refrigeration, so the company now is concentrating on properly-engineered, moderate temperature self-service refrigeration for produce.

"We have been able to prove to many supermarket operators the fact that the dairy case or meat case normally pressed into service for self-service produce is invariably too cold," Ludwig points out. "By operating his produce displays at too low a temperature, the retailer often defeats the very purpose of the refrigeration, and his spoilage losses are likely to be more costly through over-refrigeration than with the old-fashioned mist spray or cracked ice display system."

### Detailed Case Histories Help Prove the Point

Here again, case histories have helped the firm put across this point. In the case of King's Soopers, Ludwig-Patterson got the job of installing huge refrigerated produce cases, in connection with a pre-packaged produce development, solely because the supermarket operator was convinced that the company really "knew the story" as far as temperatures were concerned."

"We discovered long ago that it would require more than a handsome display of refrigeration equipment, and an adequate service department to bring us in this type of business," Frank Ludwig explains. "We have never believed in price-cutting, ridiculous markdowns, or concessions which reduce the profit possible from refrigeration sales. Thus, the only

## Get In On The Ground Floor

**M**R. CONTRACTOR, are you getting your share of the air conditioning business which is being included in a great deal of the new commercial construction and remodeling work now being carried on?

A high percentage of this type of construction now being planned will involve some sort of air conditioning. And the beauty of this type of business is that such projects are little affected by seasons.

But do you know how to go after this business? How to get in on the "ground floor" of these construction and remodeling jobs? Here are some pertinent pointers.

**1** Have every architect in your territory contacted personally by your organization. With each architect go over the line of air conditioning equipment which you handle and point out to him as graphically as possible how this equipment will fit into the kind of jobs he is handling. Review with him the projects on which he is currently working, and offer your assistance in the designing and laying out his air conditioning systems. Architects welcome such assistance from competent contractors, since it relieves them of time-consuming details.

Contact consulting engineers that specify air conditioning equipment. Review your equipment and services with them just as you did with the architects. Offer them the same design and engineering assistance. **2**

**3** Work with service companies that sell store fixtures and interiors. Most of them maintain an architectural service for their customers. Assist them with their problems of store layout and air conditioning.

Watch the building reports and permit records for contemplated and approved construction. Get to know the principals and assist them in their air conditioning problems. **4**

Yes, there is a tremendous field for air conditioning equipment in new construction and remodeling. Now is the time to organize your personnel and increase your efforts to get your share of this business!

means we had to ensure a worthwhile volume, and to build up the type of reputation we wanted, was to go much further in service to the customer."

On this basis, Ludwig-Patterson has consistently built customer goodwill and friendship, with the result that the firm now can point with pride to outstanding refrigeration jobs which it has installed for such big-time customers as the 17 Miller

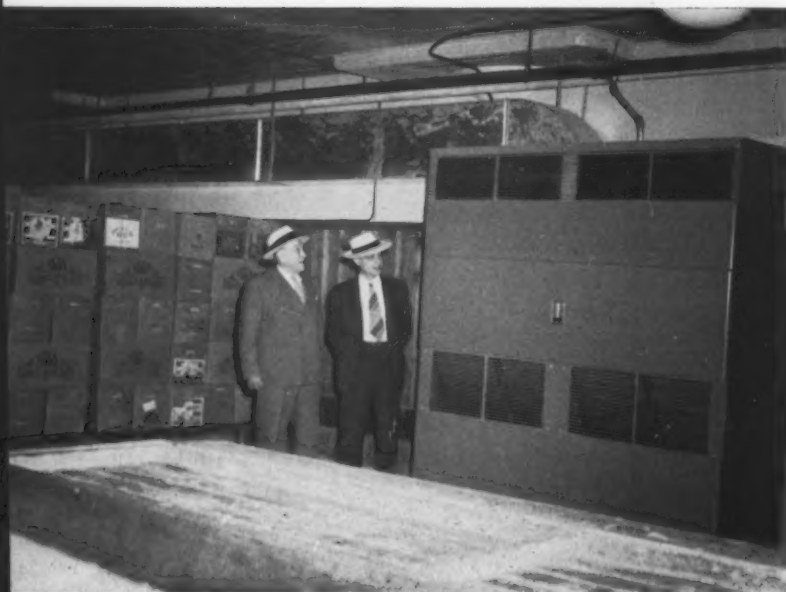
Groceria stores in Denver, the Cut-a-Corner Supermarkets in Colorado Springs, the Mountview Supermarket, Sav-a-Nickel chain of stores, White Star market, and others in Denver. In addition, a long line of super-drugstores, restaurants, hotels, specialty food stores, and similar establishments, all of which depend entirely upon Ludwig-Patterson for all aspects of their refrigeration facilities.  
(Continued on page 61)

# The THE



ANOTHER COMMERCIAL APPLICATION to which packaged air conditioning units now are being adopted is the "high temperature produce cooling" of eggs in the process of being graded and packed. The 10-ton unit shown behind the packaging area is one of two which conditions the plant of the Thibodeau Div., Beatrice Foods Co.

SALESMAN AND CUSTOMER talk over the installation as Hugo Smith, (right) sales engineer for Refrigeration Sales Corp., Cleveland contracting firm, explains to Frank Hildinger, manager of the Thibodeau Div., how the two-stage thermostats with which the system is equipped balance unit operation to load conditions. Note fresh air duct leading to unit.



ONE of the best ways of boosting profits in the egg marketing business is to provide adequate cooling facilities for the egg processing plant.

Maintenance of proper temperature conditions during the handling, candling, and packaging of eggs, from the time they enter the purchasing and grading plant until the time they leave, is an extremely important factor in getting the greatest number of eggs to the company's dealers in the best possible condition so that they will be able to command top market prices yet keep the customers coming back for more. It has been found that a temperature below 68 F must be maintained in order to retard development of the embryo in any fertile eggs.

This is the function served by the two 10-ton packaged air conditioners installed in the Thibodeau Div. of Beatrice Foods Co., Cleveland, Ohio, by Refrigeration Sales Corp., local cooling contractor. This installation provides an excellent example of high temperature produce conditioning.

The room in which this concern handles its egg processing has about 5000 sq. ft. of floor area and contains about 50,000 cu. ft. of space. The two conditioning units were located in such a way as to provide most effective air distribution throughout the room, with particular attention to the area in which the grading and packing is done.

Design conditions on this job called for cooling 30,000 pounds of eggs from 80 to 65 F in 16 hours. Additional heat load factors included a total of 27 people, a 1/2-hp motor which powers the packaging machinery, and 3150 watts of lighting.

A 12 x 20-inch fresh air duct leading to one of the two packaged conditioning units provides fresh outside

# EGG AND YOU

air at the rate of 1000 cfm. Total heat load was calculated at 232,000 Btu, calling for approximately 20 tons of cooling.

The egg candling section of the warehouse is located in an L-shaped enclosure running along two adjacent sides of the room. This area was not originally included in the cooling calculations, as it was decided that the eggs would not be in this area long enough to absorb any appreciable amount of heat. When the equip-

ment was placed in operation, however, it was discovered that the candling room actually was held at about 68 F by means of natural circulation of the conditioned air through open doorways at either end and through special vents cut at intervals through the top and bottom of the candling room wall.

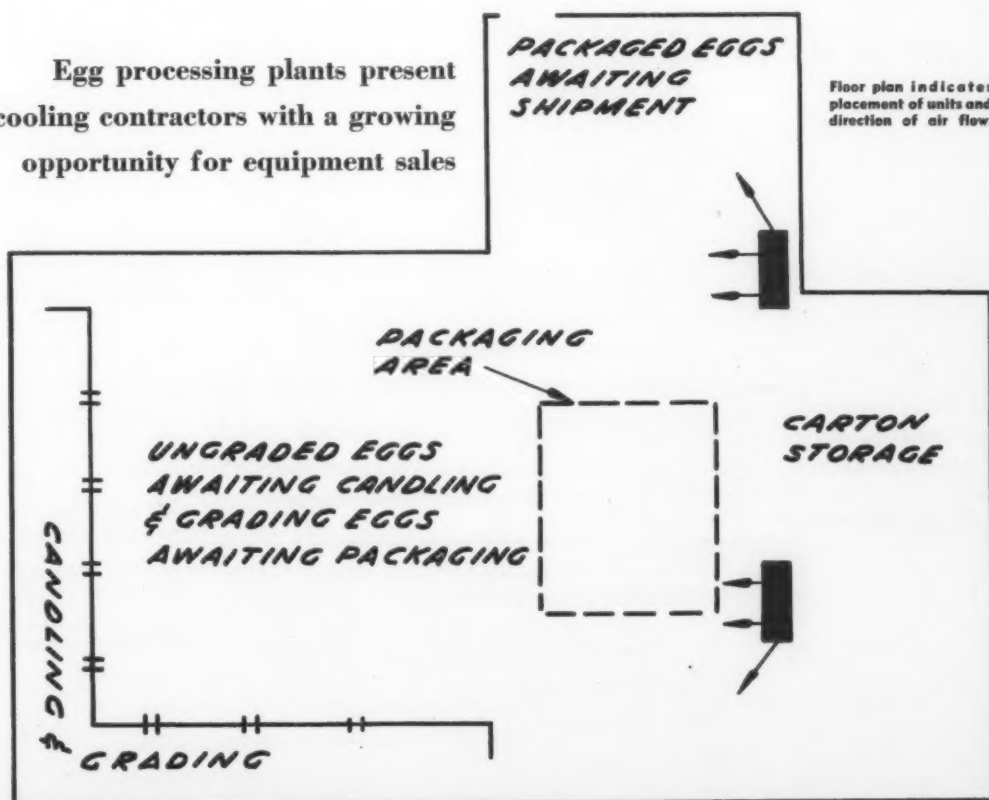
The room in which the two conditioners are located actually is held at about 63.5 F, somewhat below the established design conditions of 65 F.

Despite this, however, there has been no detrimental effect on employees. In fact, girls working at the grading and packing machine directly in front of one of the air conditioning units work without sweaters or additional clothing of any kind and report no discomfort whatever.

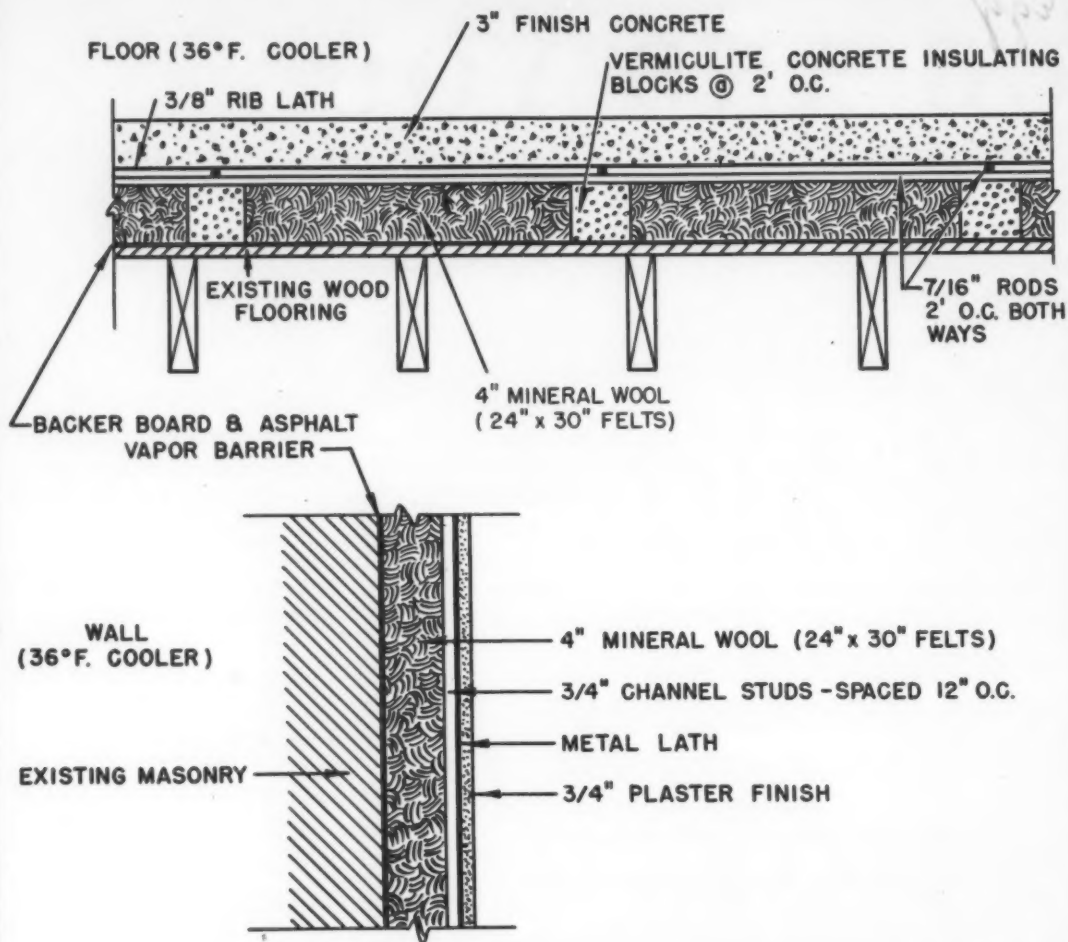
Two-stage thermostats provide the control for the two 10-ton Carrier 50K12 units, thus allowing the amount of equipment actually in

*Continued on page 45*

Egg processing plants present cooling contractors with a growing opportunity for equipment sales

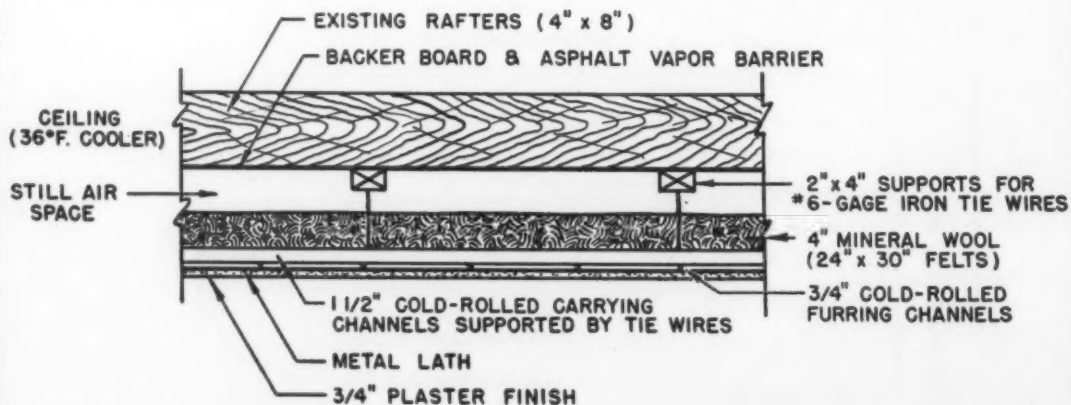






ABOVE AND BELOW are shown detail floor, wall and ceiling construction of a well-built refrigerated meat aging room held at 36 F.

Complete information on how this room and an adjoining chill room and freezer were erected is contained in the article ON THE FACING PAGE.



# Build Better Cold Rooms

## By Stressing Construction Detail

**P**AY proper attention to construction details if you want to build the type of cold storage rooms which will keep your customers happy by performing efficiently and economically for many years to come. Despite what many refrigeration men may think, you can't cut corners on your construction procedure and still come up with a quality installation.

Typical of the strict attention to detail which characterizes any well constructed refrigerated enclosures are an aging room, chill room, and freezer added by Elk Provision Co., Buffalo, N. Y., to its existing facilities in order to step up its meat-handling capacity. The thoroughness with which these rooms were erected may well serve as a profitable example to many a refrigeration contractor.

The 36 F aging room was built in a 11 x 19 x 9-ft. space. The existing structure surrounding the room consisted of two 12-inch-thick masonry walls, 2 x 4-in. stud framing as the remaining two walls, wood flooring, and 4 x 8-in. ceiling rafters.

The first and vitally important step was the installation of an effective vapor barrier. Backerboard sheets measuring 36 x 48 inches were nailed to all walls, the floor, and ceiling (except for masonry walls where backerboard was adhered with asphalt emulsion). All joints were sealed with asphalt emulsion and nail heads were covered with asphalt mastic.

Asphalt emulsion was then trowelled over the backerboard surfaces

and followed by alternate layers of vapor proof paper and emulsion to give three layers of asphalt emulsion and two of paper. The vapor barrier was then completed with supporting backerboard.

The vapor barrier was installed on the outer (warm) side of the insulation to prevent moisture from accumulating and freezing in the insulation itself. No vapor barrier was placed on the cold or inside surface of the insulation so that vapor which might penetrate the barrier can move through the vapor-permeable interior finish and collect in the form of frost on the condensing coils. In this way the insulation and room surfaces remain dry.

To install insulation over the existing wood flooring, 3 x 4 x 4-in. insulating concrete blocks (one part Portland cement, three parts vermiculite) were spotted over the vapor barrier on 2-foot centers. Two-inch-thick mineral wool insulation in 24 x 30-in. felts was cut and shaped to lie in two layers over the vapor barrier between the insulating blocks, and all

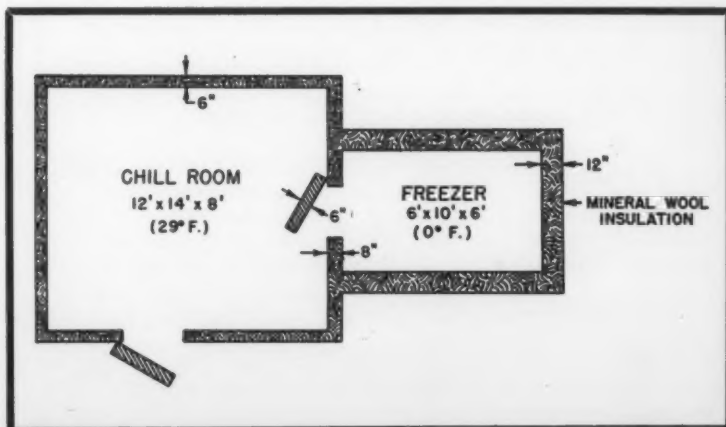
joints were staggered to eliminate gaps through both layers.

To provide floor reinforcement, 7/16-in. steel bars were placed over the centers of the insulating vermiculite blocks from wall to wall in both directions. Completing the floor insulation, 3 inches of concrete, 1-2-4 mix, was poured over a surface of 3/4-in. metal rib lath placed on the steel bars.

Next, to support the mineral wool felts, ceiling and wall channels were set in place. To provide suspension points for the ceiling channels, #6-gage iron wires were tied at 41-in. centers to six 2 x 4-in. supports nailed at 3-ft. intervals perpendicular to the existing rafters.

Four lengths of 1 1/2-in. cold-rolled carrying channels, each 18-ft. 5-in. long, were hung from the suspension wires parallel to the rafters. The carrying channels are rated at 475 pounds capacity, and each suspension point is able to support 160 pounds.

Finally, 3/4-in. cold-rolled, 300-pound furring channels were then attached with wires on 12-inch cen-



AT RIGHT is shown an insulation schematic of the 29 F chill room and the zero-degree freezer. Note how insulation thickness varies in the two rooms.



A DISCRIMINATING SHOPPER by the name of Jake buys his horsemeat fresh from the refrigerated display case in the pet supply store of Halldan Juhl, who is completing the transaction. Juhl was quick to recognize the competitive advantage that such a case would give his San Francisco store.

## "Pet" Peeve Pays Off

ONE of Morris J. Swartz's "pet" peeves is pet supply stores—pet supply stores without refrigeration equipment, that is! So Swartz, a star salesman for Silver-Stahl Corp., Super-Cold distributor in San Francisco, has launched a personal crusade to sell commercial refrigeration cases to every store of this type in his territory.

One of his best boosters in this endeavor is Halldan Juhl of Juhl's Pet Supply Store in San Francisco, who was one of the first pet store proprietors to buy a meat case from Swartz. Juhl found that installation of the Super-Cold case made it possible for him to move over 300 pounds of fresh horsemeat per day, and to boost his volume by at least 15% over what it previously had been.

Juhl points out that in addition to the increased volume, addition of the refrigerated case seems to have attracted a higher grade of customer to his store. "Since installing this piece of equipment," he reports, "there has been a marked increase in the number of pedigreed animals for which supplies are purchased in my store, and we are enjoying the patronage of many more people with expensive pets."

**\*MEMO TO DEALERS**—How many pet supply stores in your area are enjoying the benefits of refrigerated equipment?

ters across the carrying channels. On the walls,  $\frac{3}{4}$ -in. cold-rolled channel studs were spaced vertically on 12-in. centers along floor channel runners and wired securely to the ends of the ceiling furring channels.

The walls and ceiling were then ready for installation of the mineral wool felts. Two layers of 2-inch-thick felt insulation in 24 x 30-in. sections were placed behind the wall channels and in the ceiling above the carrying channels with all edges staggered and corners tightly fitted. Added insulating value is furnished by the "dead air" space remaining between the top surface of the ceiling insulation and the rafters.

### Finish Surface Applied

The entire surface area of walls and ceiling was then covered with  $\frac{1}{8}$ -in flat rib lath tied with #18-gage galvanized wire to the channel studs on the walls and the furring studs on the ceiling. A  $\frac{3}{4}$ -inch thickness of finishing plaster (one part Portland cement,  $2\frac{1}{2}$  parts sand, plus 10% hydrated lime) was applied over the rib lath in two  $\frac{3}{8}$ -inch coats. With the insulated room thus completed, the cooling system was installed.

To permit storage of provisions on the premises, a 6 x 10 x 6-ft. freezing room was built for operation at zero F. To chill ham, pork, beef and other meats for power-cutting and to provide more capacity for day-to-day storage of packaged meat products, a 29 F chill room was built in conjunction with the freezing room. A common wall and door was placed between the freezing room and the 12 x 14 x 8-ft. chill room.

### More Insulation Added

The same insulating and building techniques described in detail for the aging room were employed in constructing the chill and the freezing rooms. One important distinction, however, was that the different operating temperatures required greater insulation thicknesses.

Twelve inches of mineral wool insulation in three layers of 4-in. mineral wool felt was applied to the outside walls, floor and ceiling of the freezing room, and 6 inches was applied to the surfaces of the chill room. Both the door between the freezing and chill rooms and the

(Continued on page 45)

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EXHIBIT — BOOTH 1902  
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AMPHITHEATRE • CHICAGO  
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# SILVALOY

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"TOP BRAZING BRAINS" IN THE COUNTRY. EACH  
MAN IS A QUALIFIED EXPERT AS WELL AS  
AN AUTHORITY ON PRACTICAL BRAZING PROCEDURES.  
THIS SILVALOY STAFF IS READY TO  
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# THE AMERICAN PLATINUM WORKS

231 NEW JERSEY RAILROAD AVENUE, NEWARK 5, NEW JERSEY





## PROBLEM:

How to maintain the close control of temperature and humidity required for mushroom culture

# Mushrooms Must Be Pampered

**C**ULTIVATED mushrooms, so widely esteemed by everyone interested in good food, are probably the most carefully nurtured commercially grown vegetables in the world.

This is true mainly because the mushroom industry has left hit-and-miss production methods far behind. Today each of the three main segments of the industry is handled by specialists.

First specialists on the list are the supply houses, which can be compared with seed houses in other growing lines, with their laboratories and trained technicians. Next are the growers, who actually produce the crops; and finally there are the transportation organizations, that rush the crops to market.

In all three of these branches of mushroom production, air condition-

ing, which allows close control of temperature and humidity and permits these factors to be varied according to culture and growth requirements, plays a most important part. In fact, until the development of refrigeration equipment made possible the growing of mushrooms in specially constructed mushroom houses, the industry had largely con-

*Continued on page 55*

## SOLUTION:

Use two 10-ton packaged air conditioners ducted and equipped for maximum zone control



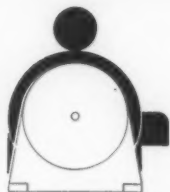


# Sales Teller!



## NEW G-E CAPACITOR MOTOR

gives you these wanted features *plus* sales-stimulating eye appeal



### COMPACT DESIGN

Over-all dimensions are smaller because capacitor is in motor base. Weight is down 15 to 20 percent, too — your shipping costs are less

### EASIER INSTALLATION

A new terminal board in the end-shield takes the place of an exterior conduit box. Terminals are easy to get at, easy to wire.

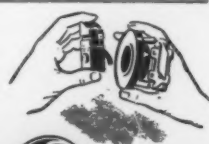


### PRACTICALLY NO UPKEEP

Factory-greased bearings hardly ever need relubrication. When they do, a pressure-relief system makes it easy.

### SMOOTH STARTING

Simple new centrifugal mechanism and totally enclosed starting switch give you smooth reliable starting — year in, year out.



### ARRANGE TO SEE IT NOW!

Call your nearest G-E office for a demonstration. For complete details write for Bulletin GEA-5401. Apparatus Dept., General Electric Co., Schenectady 5, N. Y.

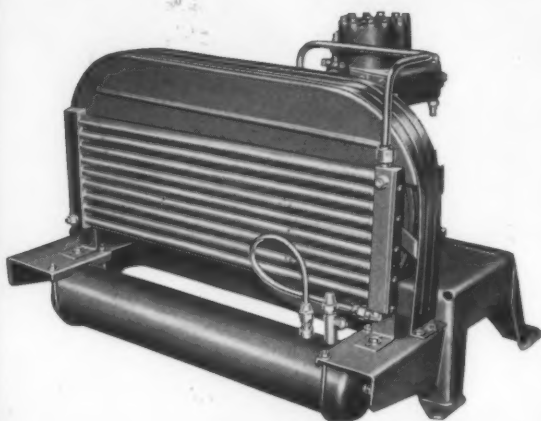
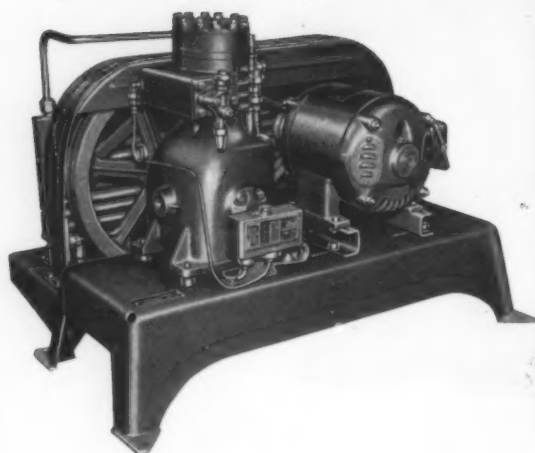
**GENERAL  ELECTRIC**

7543



# NEW

## WATER-COOLED MODELS by Universal Cooler



### CLEANABLE, DOUBLE-TUBE, COUNTER-FLOW CONDENSERS

CLEANABLE condensers and separate liquid receivers are now used on Universal Cooler water-cooled condensing units instead of shell and coil condenser-receivers.

GREATER ECONOMY in operating costs is assured because the condenser is of double-tube, counter-flow design and is cleanable with a simple power-driven tool.

BAD WATER CONDITIONS are solved easily because regular cleaning prevents accumulation of minerals and corrosion within the tubes.

DOUBLE-TUBE design and construction assures operating efficiency. Each condenser is made up of a series of tube-within-a-tube units, providing maximum heat-

exchange relationship and the greatest possible distance of travel within the condenser.

COUNTER-FLOW action between refrigerant and cooling water provides greatest possible efficiency in heat-exchange relationship.

FOR DIFFICULT JOBS where refrigeration units must operate in crowded locations and with little or no air circulation.

MADE TO U. C. SPECIFICATIONS, the new water-cooled condensers are produced by one of the leading manufacturers in this field. Condensing unit capacity ratings are the same with the new condensers as with the condenser-receivers formerly used.

# UNIVERSAL

MARION,



# COOLER

OHIO

# COMMERCIAL *Refrigerator* SALES NEWS

## NCRSA Annual Meeting in New York City, Oct. 16-17

**F**OURTH annual convention of the National Commercial Refrigerator Sales Association, scheduled for Monday and Tuesday, Oct. 16 and 17, at Hotel Astor, New York City, will present a balanced program featuring discussions of problems of foremost interest to commercial refrigerator distributors and dealers.

Indications point to a large attendance, especially since those who attend the NCRSA meetings will also have an opportunity of visiting the Dairy Show in Atlantic City later in the week. Many non-member distributors plan to attend, it is reported, to become better acquainted with NCRSA's activities.

The two-day meeting will be opened by an address by C. S. White, Modernized Equipment Co., Cincinnati. The NCRSA president's topic, "Where are We Going?" will highlight the association's year of progress and its great opportunities for service to members and the industry in the months and years ahead.

C. V. Hill, Jr., vice president of C. V. Hill & Co., Inc., will address the convention of "The Manufacturer's Role in Bringing About Greater Sales."

Other speakers for the Monday morning meeting include Russ Maintain, president of Maintain Store Engineering Co., Boston, immediate past president of NCRSA; and NCRSA's vice president, I. Rosenberg, Jr., of Refrigeration Equipment Co., Pittsburgh. Maintain will speak on "How a Complete Line of Store Fixtures Aids the Sale of Commercial Refrigeration Equipment", while Rosenberg will speak on "Let's Hold on to What We Have."

Pooling Ideas for More Effective Selling, the convention theme, will be

implemented by a panel discussion and open forum on the first afternoon of the meeting. Manufacturers and distributors who participate will present their ideas on how the supplier and his distributors can work together for greater sales, to solve problems which arise, and to further improve service. Following this the meeting will be open for questions from the floor to be answered by panel members. Manufacturers taking part in this phase of the program are:

A. B. Biddle, general sales manager, Hussmann Refrigeration; Robert L. Tyler, president, Tyler Fixture Corp.; J. L. Kaufhold, general sales manager, Weber Showcase & Fixture Co.; C. K. Litman, vice president, Koch Refrigerators. The distributor panel will comprise Barnett Berch, president, the Shultz Co., Long Island City, N. Y.; I. W. Shell, president, Lee Shell Co., Chicago, and others to be named later.

F. C. Clarke, of the duPont Company, will open the Tuesday, Oct. 17, morning session with a talk on "How Pre-packaging Sells." Another featured speaker at the session, James A. Horton, director of the Bureau of Industry Cooperation, Federal Trade Commission, will outline "Trade Practice Conference Procedures". The program also includes several additional subjects of real interest to distributors of commercial refrigerators. List of speakers had not been completed at press time.

The annual banquet for NCRSA members and guests will be held at Hotel Astor on the night of Oct. 16. James E. Gheen, well-known inspirational and humorous speaker, will deliver the principal address. Directors of NCRSA will hold their annual meeting and dinner on Sunday night,

Oct. 15. Program will include consideration of the association's activities and plans for further progress.

### 3 MORE FIRMS JOIN NCRSA ORGANIZATION

Three more commercial refrigerator distributors have recently become members of National Commercial Refrigerator Sales Association. They are:

Bodner-Shames, Inc., Norfolk, Va.; Lancaster Equipment Co., Birmingham, Ala.; and Miller & Seddon Co., Inc., Cambridge, Mass.

### FEDDERS-QUIGAN CORP. NAMES DISTRIBUTORS

Fedders-Quigan Corp. has named two new distributors as follows: Allison-Erwin Co., Charlotte, N. C., and Covington Distributing Corp., Houston, Tex.

### R. D. BATEMAN STORE DESTROYED BY FIRE

R. D. Bateman's commercial refrigeration store, located on U. S. Highway 441 just north of McIntosh, Fla., was destroyed by fire recently.

The blaze was discovered by a passing truck driver at about 4 a.m. After calling the Ocala fire department the driver managed to remove some of the filing cabinets and office furniture from the blazing store.

Bateman, who lives across the highway from his place of business, was awakened by the commotion and with the aid of his sons was able to rescue some more of the firm's records. The loss, including the store's inventory of commercial refrigeration units, was estimated at \$25,000.

### HOOSER-HOLING CO. TO REPRESENT FEDERAL

Federal Refrigerator Mfg. Co. has announced the appointment of Hooser-Holing Co. as representatives to handle dealer contact and sales promotional activities on the west coast. Mason Hooser and John Holing are both well known to the commercial trade and maintain offices at Los Angeles. Their territory for Federal will include the states of Washington, Oregon, California, Nevada, Arizona and New Mexico.



*Teach*  
**Teach**

*Schooling*  
"Schooling"

with demo  
*like this*  
like this . . .

**I**F YOU "school" prospects in your territory to think of you when they encounter a particular type of refrigeration problem, you can teach them to become customers of yours—and to advise their friends to come to you with their problems, too.

That's the practice that Ed Wright, head of Air Conditioning and Refrigeration Contractors, Youngstown, Ohio, has been following in establishing his company as the "know how" headquarters for beer cooling and dispensing equipment in his area.

Prior to World War II, Wright sold, installed and serv-

iced hundreds of draft and bottle beer refrigeration systems of all kinds, styles and types. New beer cooling equipment, of course, went out with the war, and Wright turned to locker plant construction. He followed this field after the war's end and kept after it with better than average success until about the first of this year.

Then he decided to return to his emphasis on beer cooling equipment, figuring that his best opportunity for profitable operation, in terms of selling energy expended, was in this field. Having made this decision, he sat down and began working out a merchandising plan that he

...Leads to profitable  
installations  
like these



# *Prospects to buy from you* Prospects to Buy from You

*your*  
our prospects  
*demonstrations*  
ations

thought would get him back into this business.

His first move was to send out to all the company's friends and customers a letter explaining that he was "back in business", as far as beer cooling equipment was concerned, and inviting them to visit the Air Conditioning and Refrigeration Contractors showrooms for a preview-showing of the line of equipment (Superflow) that the company had decided to merchandise.

Another sales letter—this one stressing the servicing capabilities in the beer cooling field that the company had to offer—went out to a list of tavern owners and operators in the community. The letter pointed out that the servicing of beer equipment required a special kind of know-how, and that the Wright organization had available the type of trained service mechanics who were able to do a real job for their customers.

Backing up this letter (it was printed on the other side) was a guarantee from Air Conditioning and Refrigeration Contractors that only expert service engineers would work on tavern equipment; and equipment serviced by them

would operate at maximum efficiency; that sour beer, wild beer, flat or "tail-end" beer, and cloudy beer, caused by dispensing equipment, would be eliminated; and that any draft beer equipment sold, installed, or accepted for service by the organization would draw 210 to 220 12-oz. glasses, 245 to 265 10-oz. glasses, or 320 to 330 8-oz. glasses from a standard weight 15½-gallon keg, with average collar of not more than 25 per cent or less than 20 per cent.

As a result of the "invitation" letter, which was sent to beer distributors and their salesmen, Wright scheduled a series of eight meetings at his headquarters, and about 60 persons attended. Here the "schooling" began. Wright figured that much of the knowledge of how beer should be handled had not been impressed on the newer men who had come into the business. So he set out to organize a complete course covering how beer is made, and how it should be handled and dispensed.

*Continued on page 60*







The new  
Chase Copper  
Refrigerator  
Service Tube  
package  
*Helps you* **SAVE**



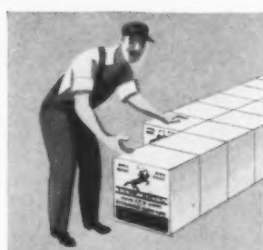
### **Saves Energy!**

Handy because tube slides out easily. Unused tube slips back in without effort.



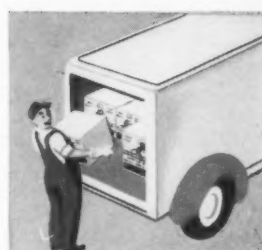
### **Saves Time!**

Easy to move and to identify sizes and specifications on end of package.



### **Saves Space!**

Every package is made of strong corrugated box-board. Flat, easy to store.



### **Saves Money!**

Every carton packed carefully and securely for safe and economical shipping.

**A**ND INSIDE this *better* package is the best Copper Refrigerator Service Tube you ever used. Chase copper tube is extra soft and uniform in temper—making it easy to work and easy to bend.

Controlled annealing *makes* it clean, bright, oxide-free—and the Chase new end seal *keeps* it clean and dry inside. Made in  $\frac{1}{8}$ " to  $\frac{3}{4}$ " diameters in standard 50' lengths, stamped with the name Chase.

# Chase



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**BRASS & COPPER**

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THIS IS THE CHASE NETWORK... *handiest way to buy brass*

ALBANY! ATLANTA BALTIMORE BOSTON CHICAGO CINCINNATI CLEVELAND DALLAS DENVER DETROIT HOUSTON INDIANAPOLIS KANSAS CITY, MO. LOS ANGELES MILWAUKEE MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER ST. LOUIS SAN FRANCISCO SEATTLE WATERBURY (Sales Office Only)

# REFRIGERATION INDUSTRY *News*

## LONG BEACH SITE OF REMA-REWA EXHIBIT, MEETINGS

The sunny shores of California will beckon to refrigeration service engineers, dealers, contractors and wholesalers on Nov. 17-18-19, when the 1950 West Coast Refrigeration and Air Conditioning Educational Exhibits and Conference is held at the Municipal Auditorium at Long Beach, Calif., in conjunction with the 13th Annual RSES convention, which opens on Nov. 16.

The 3-day show is sponsored by REMA and RSES with the cooperation of Refrigeration Equipment Wholesalers Association (REWA) and Refrigeration and Air Conditioning Contractors Association (RACCA).

Entire main floor of the Long Beach Municipal Auditorium will be used to house the educational exhibits of nearly 100 leading manufacturers.

Educational talks by leading experts dealing with every-day problems will highlight the program, which will also include motion pictures and illustrated lectures. Panel dis-

cussions will start off each day's proceedings, and factory experts will be on hand to answer questions about specific problems.

Exhibit hours are scheduled as follows: Nov. 17—1 to 5 p.m.; 7 to 10 p.m. Nov. 18—10 to 5 p.m. Nov. 19—12 noon to 4 p.m.

Acting as hosts to the convention and educational conference are the California Association of RSES, the Long Beach chapter of RSES, and the Long Beach RSES ladies auxiliary who are planning an interesting program for the ladies.

Highspot of the affair will be a banquet on Nov. 18.

The educational conference committee of REMA is composed of F. G. Coggin, Detroit Lubricator, chairman; G. E. Graff, Ranco, Inc., vice chairman; H. T. Jarvis, Refrigeration Engineering, Inc.; J. H. Spence, Hussmann Refrigeration, Inc.; R. H. Israel, Virginia Smelting Co.; and George E. Mills, REMA.

Local RSES committee in charge of Long Beach arrangements are:

International society coordinator, M. R. Hanks,

## SCARE BUYING OF 'FREON' FORCES ALLOCATION SYSTEM BY KINETIC

Apparent "scare" buying of "Freon-12" for field service operation has caused the Kinetic Chemicals Division of duPont to assign quotas of Freon refrigerants to its national distributors.

As announced by R. J. Thompson, sales director of Kinetic, in a letter to the company's national distributors, the initial allotment period was set up for the month of September, covering shipments between Aug. 26 and Sept. 25.

However, Thompson's letter did not state that the quota plan would be limited to the month of September only; so there is a possibility that allotments may have to be continued until such time as demand returns to somewhere near normal levels.

Thompson said that orders of Freon for field operations during August were almost three times higher than in August of 1949, and that the abnormal rush of orders had caused Kinetic shipments to fall four weeks behind schedule, as compared to the usual three to four days during the normal peak month of June.

Thompson asserted that there was no need to be alarmed over any possible shortages because the company would make available during September for field service operations a specified amount of Freon which Kinetic says is 159.3% of the amount shipped last September.

"The return of empty cylinders shows definitely that Freon-12 is not being used but is being bought up, or, to use the ugly word, hoarded," Thompson's letter said.

"Further," he said, "it was not our intention to restrict distribution of small cylinders of Freon-12 due to the normal declining seasonal needs, but to stop the panic purchasing now sweeping the country."

"There is adequate raw material, production capacity, and cylinders to meet all needs and requirements but not enough to take care of the extraordinary demands."

Other excerpts from the letter sent to national distributors follow:

"We do not believe that we or Freon-12 are heading into an emergency situation which might be re-

(Continued on next page)

San Diego; general chairman, Stewart Bell, Long Beach; publicity, J. Pat Riley, San Diego; housing, Al Haun, Long Beach; registration, Robert Schooler, Long Beach; entertainment, Robert Nichols, Long Beach; convention sergeant-at-arms, Charles Edwards, San Bernardino; RSES booth, Everett Brown, Compton; reception and auxiliary coordinator, Mr. & Mrs. J. A. Mura, Long Beach; safety booth, Howard Wilson, Pasadena; educational exhibits, chairman, D. Voorhies, Long Beach; co-chairman, Harry Dike, Jr., San Anselmo; official program, Kenneth Young, San Diego; committee secretary, Paul Travers, Long Beach; educational, Charles Rush, Burbank, Edward Layport, Berkeley.

## PARAGON JOINS REMA

Paragon Electric Co., Two Rivers, Wis., manufacturer of time switches for air conditioning systems and refrigeration equipment, has been admitted to membership in Refrigeration Equipment Manufacturers Association.

G. G. DeMocko, refrigeration and heating manager, will be the firm's official REMA representative.

## SHOWING OFF SWISS CHEESES



A Krack "Strat-E-Fex" ceiling unit cooler manufactured by Refrigeration Appliances, Inc., played a prominent role in the Switzerland Cheese exhibit at the International Trade Fair in Chicago. Purpose of the exhibit was to acquaint the American public with the taste of various Swiss cheeses. Purpose of the ceiling-type coil was to hold these cheeses at 42 F., with high relative humidity. Selected because of its relatively low air velocity, this cooling unit was equipped with a special pump to make it possible to conceal the drain line. Installation was made by L. C. Kohlman, Inc., Chicago cooling contractor.

## NEW KWIK KUBE KRUSHER



Model A

Specially Designed to  
Crush Ice Cubes to  
Snow or Small Pieces.

- QUICK
- SAFE
- SANITARY
- DURABLE
- ADJUSTABLE
- CONVENIENT

FOR RESTAURANTS - CLUBS - CAFES -  
HOTELS - TAVERNS - DRUG STORES

CRUSHES ICE CUBES TO ANY SIZE  
REQUIRED FROM SNOW TO SMALL PIECES

Distributors and Dealers Wanted Thruout  
All Territories

*Over 2000 units in use, giving satisfactory service*

**GARY MANUFACTURING CO.**

4500 So. Main St.

Los Angeles 37, Calif.

**SELL**

with ACME PRODUCTS

**MORE**



**Get top quality  
and the biggest market**



The new Acme Induced Cooling Towers open up new sales opportunities for you. Designed for use with self-contained refrigeration and air conditioning equipment, these packaged units are available up to and including 5 ton capacities. Can be used for outdoor or indoor application. All unnecessary parts have been eliminated to reduce weight to the minimum. Acme equipment has been serving the refrigeration industry since 1919 and the Acme name is your guarantee of scientific engineering backed by practical experience and acceptance in use. Address Dept. CF.

**ACME INDUSTRIES INC.**

JACKSON, MICHIGAN, U.S.A.

## QUOTAS ON 'FREON'

(Continued from page 39)

lated to any past shortage of material or cylinders. . .

"We have been and plan on producing and shipping Freon-12 at a much higher rate this year than at any time in our history, with adequate Freon-12 available to meet the demands and needs of all manufacturers of refrigerating and air conditioning equipment, government agencies, export, and users of areosol propellants.

"We know of none of the above users of Freon-12 who have been over-ordering, stocking, banking sharply increasing capacity, etc., in anticipation of shortage, but have been ordering and receiving shipments in a normally expected manner. . .

"Over many years of shipments to the field the pattern has been to peak in June or July and then decline in August and very sharply so in September, such as in your 1949 curve which was a normal year with no shortage of capacity, cylinders, material, war scare, strikes, restricted distribution, etc., but a free market.

"Orders received from you over the past two months have increased substantially . . . and are unseasonably higher than those two months in 1949. This situation was no doubt brought about by the Korean situation, and the threat of shortage and restricted distribution, causing over-ordering starting in July. . .

"There is no shortage of empty cylinders at our two plants, and it is not expected there will be any as long as cylinders now being shipped are emptied and returned in line with needs or usage. The present rate of empty cylinder returns is not comparable at all as far as it concerns rate of shipments, let alone the rate at which orders are being received. . .

"I feel certain that we will be out of this present situation just as soon as the country gets out of the present scare buying. We ask for your help in getting through this difficult situation and feel certain that we will receive your complete cooperation."

## RECORD SUES ON DEFROST PATENT

Refrigeration Engineering, Inc., has instituted suit against Mitchell's Refrigeration, Carrier distributor in San Diego, and American Frozen Food Lockers of Lemon Grove, Calif., and Washington Fish & Poultry Market at San Diego for the use of Carrier water defrost system.

Suit was filed in the United States District Court, Southern District of California, Southern Division, in San Diego to enjoin the use of the unlicensed water defrost systems and to recover the damages which the unlicensed use of the invention has caused Refrigeration Engineering, Inc.

The McAdam patent in this suit has been heretofore held valid and infringed by the United States Court of Appeals for the Ninth Circuit, and the Supreme Court of the United States denied certiorari.

## BALTIMORE AIRCOIL NAMES 4 NEW REPS

Four new exclusive representatives have been appointed by Baltimore Aircoil Co., Inc., to handle the company's line of evaporative condensers and cooling towers in as many different sections of the country. These new representatives and the territories they will cover are:

Marshall, Neil & Pauley, Inc., Houston, Tex.; the state of Texas except the Amarillo and Lubbock areas; Nick Ruge Sales, Lowell, Ind., central Indiana; H. M. Ludlow, Jackson, Miss., state of Mississippi except the northern and gulf counties; W. H. Dudley, Jr., New Orleans, La., the state of Louisiana except the Shreveport area.

## USAIRCO SALES UP

Sales of United States Air Conditioning Corp. equipment for May of this year were 43% higher than those for the comparable period of 1949, according to L. P. Hanson, the company's vice president in charge of sales. Backlog of unfilled orders as of May 30 was substantially higher than at any previous time since Jan. 1.

## PROCUREMENT DATA OPEN TO SUPPLIERS

Quartermaster procurement agencies are making every effort to make wide dissemination of information regarding Army purchases of supplies and contract awards, according to Brigadier General Everett Busch, Commanding General of the Chicago Quartermaster Depot.

The bidders' mailing lists are open to all responsible suppliers without exception, and invitations for bids are mailed to interested suppliers whenever a procurement is to be made. "It is in the national interest," said General Busch, "that the bidding be as competitive as possible and on as wide a scale as possible. The Chicago Quartermaster Depot will be glad to provide complete information regarding invitations for bids and contract awards to commercial agencies upon request."

In addition, the Quartermaster Corps makes bidders' information available through the 42 field offices of the U. S. Department of Commerce co-op-

erating with 2,200 Chambers of Commerce, Boards of Trade, trade associations, and State Employment Agencies. A weekly synopsis of all Invitations for Bids and of awards made by the Department of Defense is provided to these groups and to other Government agencies. The synopsis includes items, quantities, and contractors' names and addresses.

Interested persons are also permitted to be present at the opening of bids. These steps have been taken to aid contractors in locating sources of materials.

General Busch stated that some suppliers were under the impression that once their names have been placed on the bidders' mailing lists to receive invitations for bids they remained there permanently. However, this is not necessarily the case. If a supplier fails to respond to three consecutive invitations for bids, it is assumed that he is no longer interested, and his name is automatically deleted from the list.

## ACME OUTLINES MARKETING PLANS

Acme Industries' new Flow-Cold liquid chiller will be marketed through a nationwide distributor-dealer structure, according to Carl W. Millsom, recently appointed manager of the company's Flow-Cold Division. The equipment also will be available to air conditioning contractors through Acme's established field representatives.

The packaged liquid chillers are available in capacities from 2 to 15 tons, and matching Acme cooling towers and finned coils are available for each unit. It is expected that the widest use of the Flow-Cold chiller will be found in the residential air conditioning field.

## BAC NAMES AGENTS IN FOUR AREAS

Baltimore Aircoil Co., Inc., has announced appointment of the following representatives on its evaporative condensers and cooling towers:

Glenn Moore Comstock, Pittsburgh, for western Pennsylvania and West

Virginia; Thermal Products Co., Cleveland, for Cleveland, Sandusky, Mansfield, Akron, Canton and Youngstown areas; Emanuel Feinberg & Associates, Detroit, for southeastern Michigan and the Toledo, Ohio, metropolitan area; and Zintel, Byfield & Co., Inc., Chicago, for northern Illinois and northern Indiana.

## HANDLES EBCO EXPORT

Ebco Mfg. Co., has just announced appointment of Ad. Auriema, Inc., exporters, as the exclusive distributors for "Oasis" electric drinking water coolers. The Auriema company operates through representatives in practically every country in the world.

At the present time, Auriema plans to handle the Ebco business in most foreign territories through local representatives. However, an effort will be made to contact all of these foreign representatives approximately once a year through personal visits by members of the Auriema staff.

## Ice Plant Operation speeded by JAMISON DOORS

(as seen at the Southern New England Ice Co.)



### DOOR CLOSER SAVES TIME AND REFRIGERATION

Ice can be moved out on the delivery dock faster when the door closes automatically. Refrigeration is saved, too, because the Jamison Door Closer never forgets to close the door so that the full benefit of Jamison Door insulation is obtained.

### VERTICAL SLIDING DOOR SIMPLIFIES ICE CUBE HANDLING

Bags of ice cubes are handled rapidly by the roller conveyor and a Jamison vertical sliding door in the wall. For detailed information on these and other Jamison Cold Storage Doors, request Catalog 175.



JAMISON COLD STORAGE DOOR CO. • Hagerstown, Md.



Oldest and largest builder of cold storage doors in the world



## TECUMSEH OPEN UNITS UP 5-6%

Tecumseh Products Co. has issued new price lists as of Sept. 1 on its line of conventional refrigeration condensing units, showing price increases of 5 to 6%. Prices remain unchanged on the Tecumseh hermetic condensing units. The changes are the first for Tecumseh since August, 1948.

## RIISING COSTS FORCE YORK CORP. BOOST

Recent widespread price increases in cost of materials and purchased components for York Corp. air conditioning and refrigeration equipment have forced a price boost of all York equipment effective on billings starting Aug. 28, according to J. R. Hertzler, vice president and general sales manager.

The increases amount to approximately 7½%, Hertzler said. Latest increase covers all equipment, both industrial and commercial, with a few exceptions where it was found that increased cost of materials

did not necessitate a price raise.

Last May 15, price increases brought price levels of York products current with material costs as of March 9, 1950, but at that time York equipment was only boosted from 1% to 5% on some types of equipment, it was pointed out.

## COPELAND INCREASE AVERAGES 6%

Prices on several models of Copeland condensing units were increased an average of about 6% on units shipped Aug. 15 and later. Customers had been notified the latter part of July that an increase would be made starting with Aug. 15 shipments.

Copeland's price increases were the first made by the company since Jan. 15, 1949. On some models no price increases were made. Parts and replacement assemblies were increased an average of about 6%; no changes were made in water cooler prices.

Copeland officials said they had been absorbing increases in labor and

material costs for some time, but could no longer do so. They explained that they had just recently compiled enough production experience with the larger size Coplamic accessible hermetics to determine the actual costs on these models.

## RECOY ANNOUNCES INCREASE OF 6%

An increase of 6% in the price of Recoy products, effective Aug. 15, was announced by Refrigeration Economics Co., Canton, Ohio.

## PRICES INCREASED 4-18% BY AIRTEMP

Price increases ranging from approximately 4% to 18.5% were put into effect by Airtemp Div. of Chrysler Corp. effective Aug. 27. Increased labor and material costs which can no longer be absorbed were given as reasons for the increase.

The increases are on the net price to distributors and apply to equipment on order as of the effective date.

Price increases on package conditioners range from 5 to 8%. The 2-ton unit is up \$40, the 3-ton, \$35, and 5-ton, \$45, and the 8-ton, \$55.

Largest increases are in condensing units of 15 hp and over, which are now quoted to distributors less motors. On the 15-hp unit the price is up 17%; the 20 hp, 16%; the 25 hp, 18½%; 40 hp, 9%; 50 hp, 6%; 75 hp, 4%. The 15 hp compressor is up 13%, and the 25 hp unit 15%.

## MASTER-BILT UPS PRICES 5 TO 10%

Price increases averaging 5% on milk coolers and 10% on beverage coolers, direct draw and beer dispensing cabinets and food freezers have been announced by Master-Bilt Refrigeration Mfg. Co., St. Louis. C. J. Sieber, director of sales, said the increases were made "due to advanced cost of production". The new prices became effective Aug. 15.

The company also announced that it would fill orders as promptly as possible.



# NEW!

## REFRIGERATED DISPLAY TABLE

Another sales opportunity for TYLER AGENTS!

The latest Tyler FIRST offers shopping from all 4 sides—wide open self-service! Complete, ready to use—small floor space! For all types of food stores, restaurants, hotels, taverns, florist and bakery shops, candy stores, etc. Write today. Tyler Fixture Corporation, Dept. RI-10, Niles, Michigan.

# TYLER

FOR FOOD REFRIGERATION



# demand **DETROIT CERTIFIED VALVES**

*COMPENSATES for PRESSURE DROP  
ELIMINATES STARVED COILS!*



## **DETROIT'S 777-E EXTERNAL EQUALIZER EXPANSION VALVE**

- Simple, compact, and rugged construction.
- Large wrench flats—for standard wrenches.
- Cartridge needle and seat assembly simplifies cleaning and inspection.
- Accessible superheat adjustment.
- Stainless steel and brass throughout.
- Anchored Capillary for strength.
- Polished Flare Faces.
- Ball-Type Needle gives desirable flow characteristics.
- Interchangeable Inlets  $\frac{1}{4}$  and  $\frac{3}{8}$  SAE.

Now you can give your customers positive protection against faulty display case operation . . . save yourself the loss of time, money and energy caused by unnecessary call-backs! **DETROIT'S** 777-E External Equalizer Expansion Valve assures perfect refrigeration at all times because it reacts simultaneously to both pressure and temperature at the coil outlet, compensating for pressure drop and *positively eliminating starved coils*. Combining all of the many outstanding design features of **DETROIT'S** popular 777 valves, the 777-E is the *only* External Equalizer Expansion Valve specifically designed for 1 and 2 ton Freon-12 capacities. Contact your nearest **DETROIT** wholesaler and ask for **DETROIT'S** 777-E. You'll see for yourself why it's a natural for greater sales and greater profits!

# DETROIT

**LUBRICATOR COMPANY**

5900 TRUMBULL AVE., DETROIT 8, MICHIGAN

Division of **AMERICAN RADIATOR & Standard Sanitary CORPORATION**  
Canadian Representatives: **RAILWAY & ENGINEERING SPECIALTIES, LTD.**—Montreal, Toronto, Winnipeg



**DETROIT HEATING AND REFRIGERATION CONTROLS • ENGINE SAFETY CONTROLS • FLOAT VALVES AND OIL BURNER EQUIPMENT • DETROIT EXPANSION VALVES AND REFRIGERATION ACCESSORIES • STATIONARY AND LOCOMOTIVE LUBRICATORS**

*Sealing, Air and Insulation* • AMERICAN STANDARD • AMERICAN BLOWER • CHURCH STATE • DETROIT LUBRICATOR • KEWANEE ROGERS • KOSS HEATER • TONAWANDA IRON

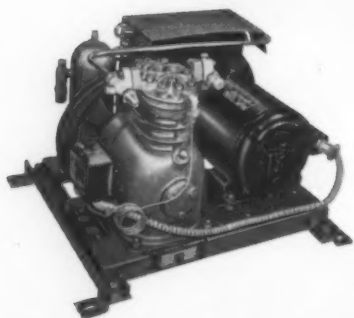
and AIR CONDITIONING • OCTOBER, 1950

# MILLS CONDENSING UNITS LARGE and SMALL CAPACITIES

Model 1000-W: Mills big sturdy-duty 10 h.p. Water Cooled Condensing Unit. A giant for service.



## All Provide Same Reliability and Long-Life Economy



Model 25-C: Mills small 1/4 h.p. Air Cooled Unit. Widely used for a variety of requirements. Dependable long-life construction.

Chosen again and again for their long-life dependability, Mills Compressors and Condensing Units, from the 10 h.p. down to the 1/4 h.p. capacity, give you a range to meet the big majority of all refrigerating and air conditioning requirements.

You'll find no skimping—no over-rating. Because of proven performance, experienced engineers and service men know they can count on Mills Units long-life performance. They cost less per year!

**MILLS INDUSTRIES, Incorporated**  
4100 Fullerton Ave. • Chicago 39, Illinois



Write for 60-page  
Bulletin 204-1

# MILLS CONDENSING UNITS

CAPACITIES FROM 10 H. P. DOWN TO 1/4 H. P.

OCTOBER, 1950 • COMMERCIAL REFRIGERATION



## THE EGG AND YOU . . .

Continued from page 27

operation to closely approximate load conditions at all times. This arrangement has proven to be of definite advantage in maintaining the relatively high humidity conditions which are desirable for egg handling and storage.

Frank Hildinger, manager of the Thibodeau Div. has expressed complete satisfaction with the performance of the packaged cooling system.

"It definitely enables us to ship a greater number of eggs in better condition to our dealers," he declares. "With tightening government inspection and an increasingly critical attitude upon the part of customers it is rapidly getting so that no egg processing plant can afford to be without adequate mechanical cooling.

"In addition to giving us better eggs, the cooling equipment also has given us better working conditions from many standpoints.

"One big factor which influenced our decision toward packaged equipment," Hildinger points out, "was the fact that we only lease our space in the building here and we didn't want to invest our money in anything which we couldn't take with us if we had to move.

"We realized that if we put in anything in the way of a permanent installation it would place us pretty much at the mercy of our landlord when the lease came up for renewal. With packages we can move to new quarters, if necessary, and take virtually all of our cooling investment along with us."

## BETTER COLD ROOMS . . .

Continued from page 30

exterior door to the chill room have 6 inches of insulation, and the common wall between the two rooms is insulated with 8 inches of felt mineral wool in two 4-inch layers.

The thickness of insulation on the freezing room was purposely made two inches greater than the recommended minimum for an average operating temperature of zero F. The extra insulation will permit use of the room as a fast-freeze locker at -10 F. The 6 inches of insulation on the chill room is the thickness recommended for operation in the

range from 35 F down to 20 F.

Careful selection of the refrigerating units for the freezing room and the chill room was aimed at ensuring effective continuous operation. To freeze poultry and meat at zero F, a refrigerant evaporating temperature of -10 F was used. The 10-degree difference between the evaporating temperature of the refrigerant and the temperature of the freezing room has been found to result in efficient refrigeration without excessive frosting on the condensing coils.

For the freezer, a Brunner 1½-hp water-cooled condensing unit pro-

vides Freon-12 at -10 F evaporating temperature. For the chill room, Freon-12 at 20 F is supplied by a 1-hp Brunner water-cooled condensing unit. To permit continuous operation of the refrigeration equipment with minimum manual control, a Kramer automatic defrosting unit for each room, coupled to the condensing pump and coils, is actuated every four hours.

Thus equipped, the Buffalo plant is amply powered and insulated to meet not only present but also the foreseeable future requirements efficiently and economically.

## FAST.. ACCURATE DIAGNOSIS OF A SERVICE PROBLEM



### MUELLER BRASS CO.

"SEEING EYE"

LIQUID INDICATORS  
TELL AT A GLANCE  
WHETHER OR NOT  
THE SYSTEM IS  
SHORT OF  
REFRIGERANT



Packaged in individual cartons to protect your investment.

NO NEED TO GUESS! With the new, improved Mueller Brass Co. Liquid Indicators you can save valuable time in diagnosing a service problem.

By simply removing the brass protecting cap, and looking through the clear, clean sight glass, you can tell at a glance whether or not the system is short of refrigerant.

The rugged, forged brass body is permanently leak-proof and is designed for years of safe, dependable service.

Available in male or female flare and O.D. solder types in a wide range of sizes.



ORDER A SUPPLY TODAY FROM YOUR REFRIGERATION WHOLESALER

**MUELLER BRASS CO.**  
PORT HURON, MICHIGAN



DOUBLE PORT  
INDICATOR

FOR MINIMUM LIGHT



**MOTOR-CAPACITOR  
NEEDS can be**

**JIFFY  
CHECKED**  
with this

**SELECTOR**



When defective capacitor is not identifiable, simply clip this Aerovox Capacitor Selector in place, flip switches, and read correct capacitance value required.

For emergency operation, clip the Aerovox Emergency Capacitor in place. Plug in necessary sections to total required capacitance value. That gets the motor going FAST.

And at your convenience, replace Emergency Capacitor with permanent Aerovox Exact-Duplicate or Universal Capacitor.

• Ask your supplier for these time- and money-saving service aids. Ask for latest catalog. Or write us.

CAPACITORS • VIBRATORS • TEST INSTRUMENTS



**FOR RADIO-ELECTRONIC AND  
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Sales Offices in All Principal Cities • Export: 41 E. 42nd St., New York 17, N.Y.  
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## Useful LITERATURE

The publications listed below are available to readers without charge. Simply list on the postcard in this issue the key numbers of the items you wish to receive. Your requests will be forwarded directly to the companies concerned.

### INSTRUMENTS

**J-1—Thermometers . . .** Descriptions and specifications for five different types of indicating and recording thermometers as well as for bulbs and fittings are included in this new folder issued by Electric Auto-Lite Co.

**J-2—Recording Gauges . . .** A 32-page bulletin on its Series 500 line of recording gauges has just been published by Bristol Co. Measuring elements, operating principles, recording charts and accessories are fully described. In addition to numerous photographs, the bulletin is liberally illustrated with reproductions of actual chart records and sketches of applications.

### POWER EQUIPMENT

**J-3—Generating Plants . . .** This folder describes and illustrates the Onan standby electric generator for emergency use, and tells how many types of businesses and institutions protect themselves against power failure. Available from D. W. Onan & Sons, Inc.

**J-4—Phase Converter . . .** A 4-page bulletin explaining how this phase converter makes it possible to use 3-phase motors on single phase lines. Available from Henry Electric Co.

### AIR HANDLING UNITS

**J-5—Window Fan Units . . .** A folder available from Edgar T. Ward Industries, Inc., on its home cooler window fan units. Describes models in the line, gives list prices, outlines specifications and applications features. Units are for ventilation only; no mechanical cooling device is incorporated in them.

**J-6—Air Filter . . .** A 6-page bulletin describing and illustrating "Amer-glas" line of replaceable type air filter for use in packaged unit air conditioners and small central systems. Operation, maintenance, and efficiency are discussed. Available from American Air Filter Co., Inc.

**J-7—Air Diffusers . . .** A 6-page folder telling "what you should know" about aspirating air diffusers. This folder is illustrated with a number of diagrams and gives engineering data and formulae for calculations used in solving air condition-

ing problems. Available from Anemostat Corp. of America.

**J-8—Industrial Filter . . .** Technical data on the multi-velocity "Alumaloy" industrial filter for either low or high velocity applications is detailed on a new AIA file sheet issued by Research Products Corp. Tips on how to specify the proper filter for each job are included.

### COOLING TOWERS

**J-9—Cooling Towers . . .** Catalog sheets 40-A and 40-B present in simplified tabular form all the information necessary to facilitate selection of the proper cooling tower for any particular job. Complete description of the towers is included, and pictures of component sections are presented. Available from Acme Industries, Inc.

### PUMPS

**J-10—Centrifugal Pumps . . .** Complete information on a new self-priming centrifugal pump line is contained in this 8-page bulletin (636.1) available from Goulds Pumps, Inc. Principles of operation are described, construction features outlined, specifications listed, and performance tables presented.

### SHOP EQUIPMENT

**J-11—Electric Hand Saw . . .** A data sheet illustrating and describing an electric hand saw adaptable to refrigeration construction work. Complete specifications are listed. Available from Portable Electric Tools, Inc.

**J-12—Electric Drill . . .** A comparative performance chart is in this catalog sheet (Bulletin 400-50) covering the "Speed-Drill" electric drill. Construction features are shown on a detail diagram. Available from Speedway Mfg. Co.

**J-13—Acetylene Gun . . .** A mailing piece describing and illustrating the "Presto-Matic" hand held, trigger fired acetylene gun for every air acetylene job up to 2800 degrees. Available from Century Mfg. Co.

**BUY FROM YOUR  
REFRIGERATION WHOLESALE**



# A Size and Type to fit your needs *exactly!*



**15  
KELVINATOR  
Open-Type  
Condensing  
Units**



A selection of 10 Kelvinator Hermetic Models up to and including  $\frac{1}{2}$  H.P. is also available.



Yes! Kelvinator offers a complete range of open-type condensing units from  $\frac{1}{4}$  H.P. to 5 H.P. Here's the way for you to meet customers' *exact* needs . . . and *satisfy* them through Kelvinator extra-value! Each condensing unit is precision-built, precision-tested to exacting standards. Each is competitively priced and bears the name that users immediately associate with the finest in refrigeration products.

Sell Kelvinator for your next new or replacement installation. You'll see your choice reflected in better satisfied customers. For complete information call your nearest Distributor or Zone Office. Kelvinator, Division of Nash-Kelvinator Corporation, Detroit 32, Michigan.

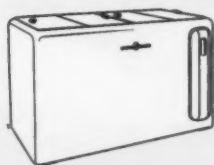
**PROFIT TODAY...BUILD FOR TOMORROW WITH**

## ***Kelvinator***

**THE NAME THAT SELLS...THE NAME THAT SATISFIES!**



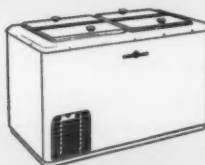
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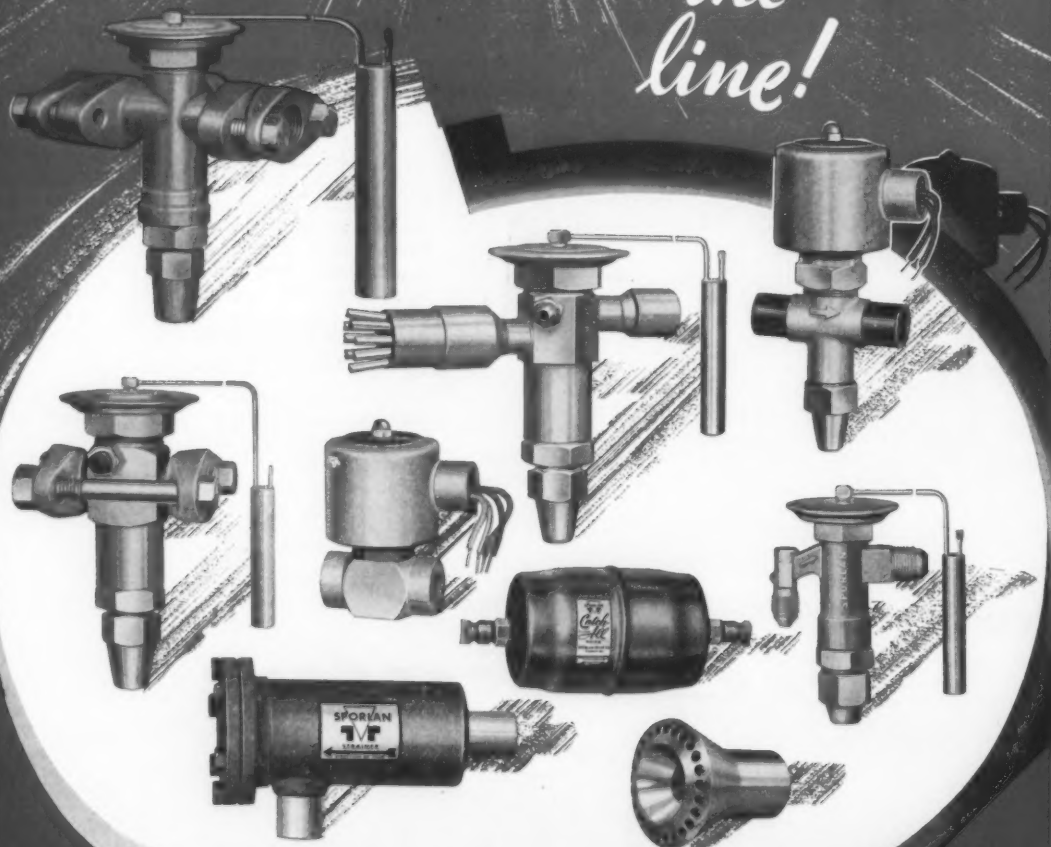
*on All installations*

*Buy*

**SPORLAN**



*right  
down  
the  
line!*



**SPORLAN VALVE COMPANY**

*St. Louis, Mo.*

# NEW Products

For further information on any of these products, simply list on the postcard provided in this issue the key numbers of the items in which you are interested. Your requests will be forwarded directly to the companies concerned.

## Solenoid Valve .....PJ-1

**Product:** Type XBH solenoid valve designed for controlling flow of flavoring syrups for carbonated beverages and liquid foods.

**Manufacturer:** Sporlan Valve Co., St. Louis, Mo.

**Features:** For sanitary reasons valve is constructed so that it can be taken apart without using tools. It can be completely dismantled and all parts cleaned right on the job. Internal parts are stainless steel. Inside passage-ways are designed to allow free flow of liquids and elimination of any possible pockets which might accumulate deposits causing contamination. Coil can be removed by unclipping a spring clip at top of enclosing tube and removing top plug so that a brush can be run completely through the enclosing tube after plunger has been removed from

in insulation to provide maximum efficiency under all climatic conditions. Body of unit has corkboard and fiberglass insulation, fully sealed against moisture. Doors are of stain-



less steel with vapor-proofed panelyte pan. Over condensing unit section there are three walls of refrigerating surface for faster freezing of foods. A perforated kickplate and two grills provide maximum ventilation for the air-cooled 1/3-hp condensing unit which is hermetically sealed. An ingenious "glide out" arrangement facilitates cleaning and service. Has storage capacity of 700 pounds. Stainless steel top; baked enamel finish on body.

## Room Conditioner .....PJ-3

**Product:** One-room air conditioners (Series RVY) for attaching to a central system.

**Manufacturer:** Worthington Pump & Machinery Corp., Harrison, N. J.

**Features:** Designed to condition rooms in hotels, hospitals and office buildings or other applications where each room must be individually controlled by the occupant. Can be furnished for direct expansion where there are only a few units or for chilled water for large installations. Chilled water cooling coils can be converted by a single switch to become heating coils. Direct outside air may be taken through a filter or high pressure fresh air may be supplied. May be fully automatic with

thermostat control or else controlled manually. Conditioners consist essentially of finned cooling and heating coils, a drip pan, standard casing which may be omitted for concealed installations, two double-width inlet fans, fan motor, filter, and insulation. Front, top, and piping end panels are easily removed. Controls are in full view of occupant. Available in two sizes with cfm ranges of 200 to 350 and 350 to 600.

## Biological Case .....PJ-4

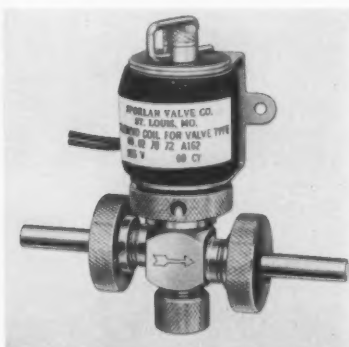
**Product:** Fully automatic refrigerator (Model ADA-96) available with all-steel chrome-finished drawers for the safe storage of sera, blood plasma, toxins, anti-toxins, and other pharmaceutical supplies.

**Manufacturer:** Westinghouse Electric Appliance Div., Mansfield, Ohio.

**Features:** Eight-drawer biological insert is constructed of chrome



steel with polished chrome steel door fronts. Drawers have perforated cane sides and bottom to permit air circulation and have solid backs. The insert has rubber bumper legs to prevent damage to the liner of the refrigerator and each drawer is equipped with a name panel. Top



valve body. Stem and plunger are in one piece. Each take-apart joint is sealed by an O-ring. Valve is equipped with metering pin for regulating the flow of liquid being controlled.

## Freezing Cabinet .....PJ-2

**Product:** Model A-20 freezing and storage cabinet.

**Manufacturer:** Ace Cabinet Corp., New Bedford, Mass.

**Features:** Precision engineering

four drawers are 3 inches deep; bottom four drawers are 5 inches deep. Capacity is 9.6 cu. ft. Features "frost free" refrigeration system. Since no more than a thin veneer of frost is ever present on freezer walls, dry cold air is steadily maintained. Defrosting is accomplished by warming the Freon refrigerant with an electrical heating element and circulating it through the system. The defrosting cycle is automatically set in motion each time the refrigerator has been successively opened 60 times. Other

features include a "Sterilamp" to eliminate air-borne bacteria; a full width freezer chest for freezing and storing 41 pounds of foods and ice; and an automatic door closer.

#### Gas Mask . . . . . PJ-5

**Product:** New approved gas mask with triple-utility face piece.

**Manufacturer:** Acme Protection Equipment Co., Chicago, Ill.

**Features:** New face piece (No. 6) provides chin style, chest style, and



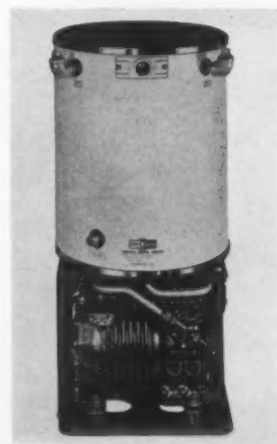
hose mask connection in one unit, yet retains all full-vision advantages of other types. New type inhalation-exhalation valve for minimum breathing resistance. Includes regular Acme features such as dead-air check valve. Increased audibility of speech. Minimized fogging. Light in weight.

#### Comm'l Water Coolers . . . PJ-6

**Product:** New line of improved commercial water coolers in "packages".

**Manufacturer:** Day & Night Div., Affiliated Gas, Inc., Monrovia, Calif.

**Features:** Factory engineered and assembled cooling unit provides a perfectly balanced cooler with all parts integrally related, assembled, tested, and adjusted. A choice of

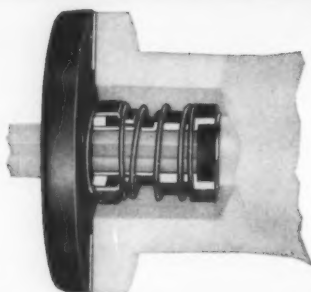


three basis tank sizes combined with refrigerating machines in either a vertical construction or side by side. It is necessary only to supply water to and from the cooler to one or more outlets. The larger units are suitable for circulating systems. Capacities up to 32 gph are available. An exchange of refrigeration units can be effected quickly, if necessary.

## ROTARY SEAL REPLACEMENT UNITS

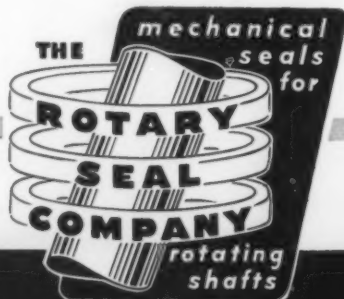
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For most makes and sizes of Commercial, Semi-Commercial, Air Conditioning, and Household Refrigerator Compressors. ROTARY SEAL Units are known throughout the world for . . . *Simplicity in Construction . . . Ease of Installation . . . Efficiency of Operation . . . Economy.* The original time-tested, precision-built replacements — 19 years of service.

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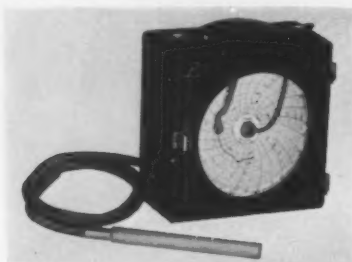
**2020 NORTH LARRABEE STREET  
CHICAGO 14, ILLINOIS, U.S.A.**

CANADIAN AGENT: 2025 ADDINGTON AVENUE  
MONTREAL 28, QUEBEC, CANADA

## Temperature Recorder . . . PJ-7

**Product:** "Minicorder" self-contained recording thermometer for charting actual temperatures in both mobile and stationary units.

**Manufacturer:** Tagliabue Instruments Div., Weston Electrical Instrument Corp., Newark, N. J.



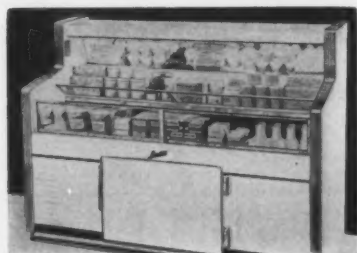
**Features:** Provides accurate check of storage space temperatures for those engaged in the shipment, storage, or merchandising of commodities requiring refrigeration. Requires no connection to any power supply, yet records over a period as long as 7 days without attention. Shock-proof mechanism makes it especially adaptable to transport refrigeration. Wide application also as a permanently mounted thermometer in retailing or storage establishments. Temperature range in various models from -30 F to 165 F. Charts available for 24-hour, 72-hour, 3-day, and 7-day operation. Special two-pen models available for on-off recording of related equipment. Measures only  $5\frac{3}{4}$  x  $5\frac{3}{4}$  x  $4\frac{1}{4}$  inches and weighs  $3\frac{1}{2}$  pounds.

## Double-Deck Case . . . . . PJ-8

**Product:** All-purpose, double-deck display case (Model L3007SC) for package meats, dairy products, vegetables, and beverages.

**Manufacturer:** Loudon Mfg. Co., Minneapolis, Minn.

**Features:** Equipped with a temperature adjustment control for every type of food. Self-contained  $\frac{1}{2}$ -hp unit. Designed for self-service and



equipped with individual lighting for each display deck. Ideal for wall or center aisle display. Add-a-section construction allows additional units to be added at either end for continuous display. Slanted glass shelf between main display and mezzanine deck aids proper circulation of refrigerated air. Overall length is 7 feet; case provides  $30\frac{1}{2}$  sq. ft. of refrigerated area. Front exterior is white porcelain with black porcelain trim. Balance of case is finished in white enamel with aluminum shelves. Storage section has galvanized lining.

## Transparent Lid . . . . . PJ-9

**Product:** Improved design transparent lid for open-top ice cream cabinets.


**Manufacturer:** R. K. Merritt & Assoc., Pasadena, Calif.

**Features:** Arched design gives greatest strength and resiliency for long life. Open ends and back permit a slow circulation of room air to warm lid and reduce fogging to a minimum. A rubber edge is securely fastened to the reinforced front for quiet operation. The red bar handle is welded to the lid and the rein-


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IN *Motors*




General Purpose Motors



Synchronous Motors




High Torque Compressor Motors

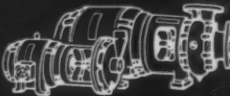


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You'll get more . . . in performance, efficiency and satisfaction . . . by relying on Fairbanks-Morse as your source for motors and pumps. With Fairbanks-Morse, you are not limited in your selection . . . the broad line enables you to get the right unit for

your individual requirements. You deal with motor and pump experts . . . men who are familiar with your problems. For more in motors and pumps, consult your nearest Fairbanks-Morse Branch or write Fairbanks, Morse & Co., Chicago 5, Ill.

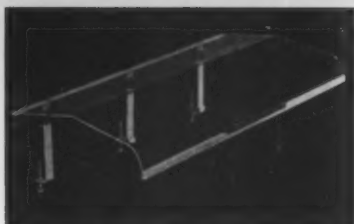


## FAIRBANKS-MORSE,

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DIESEL LOCOMOTIVES AND ENGINES • ELECTRICAL MACHINERY • PUMPS • SCALES  
HOME WATER SERVICE AND HEATING EQUIPMENT • RAIL CARS • FARM MACHINERY





forcing strip. Lid is hinged at back on chrome plated clamps which can be easily and securely fastened to the cabinet top over the rubber chamber guard. No tools are necessary for the installation. Five different sizes

are available to fit most standard open-top cabinets on the market.

#### Tailgate Loader . . . . .PJ-10

**Product:** "Venco" one-man tailgate loader for  $\frac{1}{2}$ ,  $\frac{3}{4}$  and 1-ton pickup trucks.

**Manufacturer:** Ven Corp., Los Angeles, Calif.

**Features:** Has load capacity of 600 pounds. Can be loaded and raised by one man with nine easy turns of a removable crank. All movable parts run on ball bearings

and two strands of heavy roller chains that support the load have a breaking strength of 3600 pounds apiece. Model 25 has a platform 28 x 48 inches and the load is held at any position with a ratchet. Closes flush to truck and does not interfere



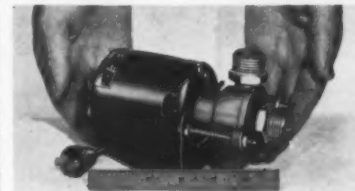
with body styling. Finished in red enamel and shipped as a completely self-contained mechanism, requiring only a few holes drilled for simple installation.

#### Recirculating Pump . . . . PJ-11

**Product:** Small, high capacity recirculating pump for such uses as evaporative coolers, circulating pump for milk coolers, etc.

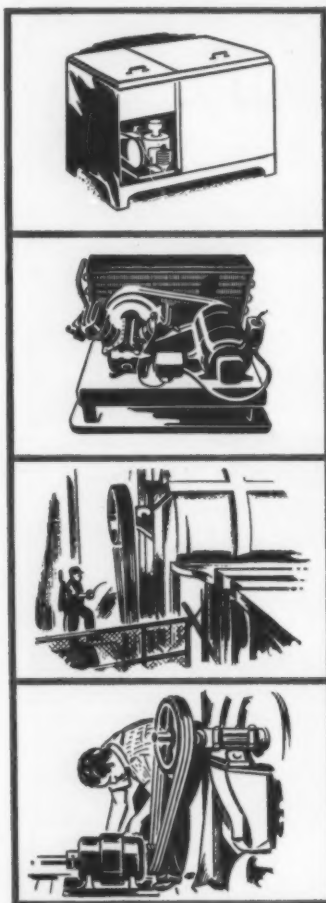
**Manufacturer:** Samuel S. Gelber Co., Chicago.

**Features:** Employs entirely new principle that doubles efficiency. Patented principle provides a double-blade, heavy molded rubber impeller,



with wide clearance in the pump housing, with a non-clogging feature that will pass solids and prevent motor from stalling. One piece pump body acts as swirl chamber. Delivers 480 gph at 2-foot head, and 180 gph at 10-foot head. Complete body is cast in one piece of hydraulic bronze. Long life seal has high friction resistance. Pump is mounted direct on shaft of a fan-cooled motor.

**BUY FROM YOUR REFRIGERATION WHOLESALER**



## Your NEW *Gilmer* Belt Bible is ready— it's your guide to more V-Belt Sales!

Here's the latest "Belt Bible" from Gilmer!—it's a fact-packed reference guide to Gilmer V-Belts for household and commercial refrigeration units: bottle, milk, and beverage coolers; ice cream cabinets; air-conditioning units; air compressors. In short, a complete V-Belt library in one convenient volume! Get your copy today. Write, requesting the new Gilmer Refrigeration V-Belt Guide!

### The HOW and WHERE of better V-Belt business

**HOW:** Keep your Gilmer stock complete—a variety of V-Belts and also the other refrigeration necessities in the Gilmer line; tape, shock-pads, wire, hose, packing.

**WHERE:** Industrial plants, office buildings, theaters, restaurants, super markets, grocery stores, hospitals, institutions, department stores, ice cream manufacturers. In short, any business that uses refrigeration can give you business!

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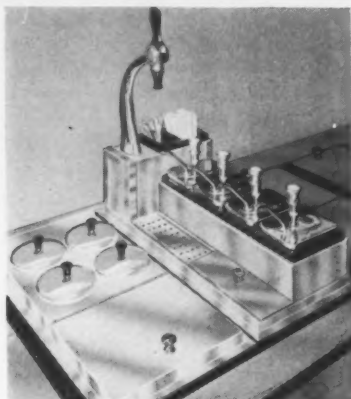
**L. H. GILMER COMPANY**  
TACONY, PHILADELPHIA 35, PA., U. S. A.  
Division of United States Rubber Company





## Soda Fountain . . . . .PJ-12

**Product:** "Serv-All" soda fountain unit for installation in standard ice cream cabinet.



**Manufacturer:** Smith-Werner Co., Denver, Colo.

**Features:** Occupies the space of only two complete holes of a standard ice cream cabinet and is equipped with a two-way soda draft arm, four standard syrup pumps, four crushed fruit jars with ladles and spoon holder, a chipped ice compartment,

and storage space for nine quarts of milk. Features conventional pre-cooled water bath method for soda water. Eliminates all major installation costs. Can convert the smaller "dry stop" operation into a "wet stop", thereby increasing the potential of bulk ice cream sales.

## Concrete Drills . . . . .PJ-13

**Product:** New line of concrete drill bits.

**Manufacturer:** Tilden Tool Co., Pasadena, Calif.

**Features:** Drills are of a new "centerless" design and are furnished in a range of sizes from  $\frac{3}{16}$  to  $\frac{7}{16}$  inches. Because there is no center point to act as a pivot and retard cutting, these new drills penetrate concrete at high speeds with 80% less pressure than required for ordinary drills of same diameters. Drill bits can be used with ordinary electric drills at speeds of from 500 to 1200 rpm.

**BUY FROM YOUR  
REFRIGERATION WHOLESALER**

## Low-Temp Self-Serve . . . .PJ-14

**Product:** Low temperature self service cabinet for the sale of frozen foods and ice cream.



**Manufacturer:** Frigidaire Div., Dayton, Ohio.

**Features:** Rolling glass top is constructed of triple panes of glass, providing an unobstructed view of the interior at all times, and has stainless steel frames which ride on recessed tracks. Design is similar to Frigidaire's self-contained ice cream cabinet line, with a unique space-saving compressor arrangement and under-the-cabinet condenser, provid-

*tests prove  
out wear all others 5 to 1*

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Recent tests again proved that Schaefer brushes are superior to all others. Fully guaranteed against faulty workmanship or inferior materials . . . Schaefer brushes will do a better cleaning job and will last longer. It's economical to buy the finest made . . . for the finest, always buy Schaefer.



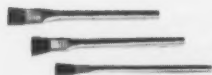
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Brush



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When you run into an unusual cleaning problem pass it along to Schaefer experts for prompt solution.

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**SCHAEFER BRUSH MFG. CO.**

117 W. WALKER ST., MILWAUKEE, 4, WIS.

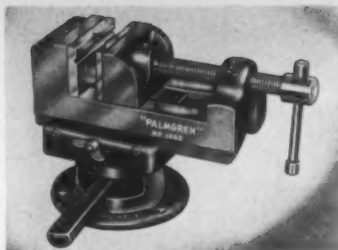
"Always Buy Schaefer — It's Safer"

ing 11.2 cu.ft. of full length top-to-bottom storage space. Three solid aluminum thermal dividers. All-steel cabinet with four inches of insulation is finished in white enamel. Available as accessory equipment is a streamlined merchandising super-structure with 4-color transparencies.

#### Bench-Drill Press Vise . . . PJ-15

**Product:** No. 1252 "Palmgren" bench-drill press vise.

**Manufacturer:** Chicago Tool & Engineering Co., Chicago, Ill.



**Features:** Equipped with a swivel bench base and adapter for bench mounting. Vise can be rotated 360 degrees horizontally and quickly

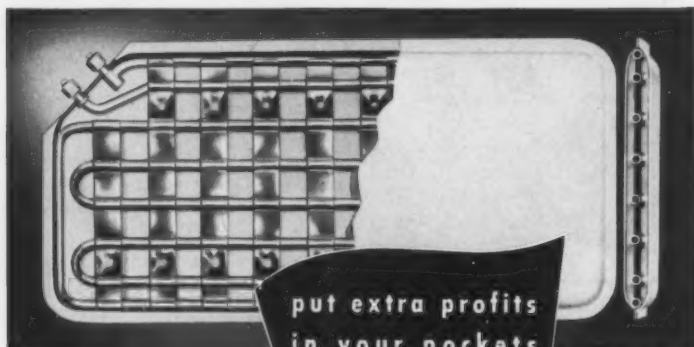
locked in any position. Can be easily removed for use on a drill press or any other machine. Base is dovetailed and is removed from adapter by loosening thumb screw and sliding vise out of adapter. Removable steel jaw plates are provided, one of which is V-grooved horizontally and vertically for holding round stock or irregularly shaped pieces. Jaws are  $2\frac{1}{2}$  inches wide and open  $2\frac{1}{2}$  inches.

#### Measuring Tape . . . . . PJ-16

**Product:** New lightweight "Rolatape" for accurate one-man measurement, vertically, horizontally, or around curves.

**Manufacturer:** Rolatape, Inc., Santa Monica, Calif.

**Features:** Permits safe and accurate measurements of from a few inches to almost unlimited lengths by



### . . . a lifetime of LOW COST TRUCK REFRIGERATION!

Kold-Hold "Hold-Over" Truck Refrigeration puts extra profits in your pocket. It protects products in transit and gives it greater customer appeal. It does all this for less than 10 cents a day, less than the cost of ice alone.

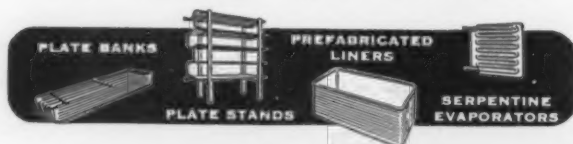
With Kold-Hold "Hold-Over" Plates you can predetermine the desired truck temperature throughout the longest day's runs to keep products safe, clean, attractive and more saleable. "Hold-Over" Plates last the lifetime of the truck. The extra long life of Kold-Hold "Hold-Over" Plates is due to exclusive design features which eliminate operational failures. In

"Hold-Over" Plates, the outer edges freeze first and the strain caused by expansion is placed on the center and strongest part of plate.

#### NO CASE OF OPERATIONAL FAILURE EVER REPORTED

With over one-half million "Hold-Over" Plates in use today, no case of operational failure has ever been reported. Trucks equipped with Kold-Hold "Hold-Over" Plates have been subjected to the most severe operating conditions possible, in all types of trucks. Never yet have they failed to provide the refrigeration needed.

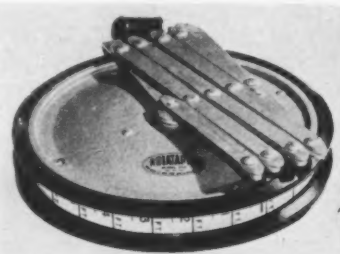
See your local refrigeration supplier or write us for details



## KOLD-HOLD

protects every step of the way

KOLD-HOLD MANUFACTURING CO., 503 E. Hazel St., Lansing 4, Mich.



a single individual. Recessed tape face on rim of wheel indicates measurements in fractions of inches up to 2 feet. Automatic counter clocks measurements in feet and in cycles of 100 feet. In addition, an audible click is made for every 2 feet measured, and a bell rings at the 100-foot mark. Lightweight handle collapses down to 8 inches when not in use, so that complete unit can be carried in glove compartment of any automobile.

#### Display Case . . . . . PJ-17

**Product:** "Display Rite" cabinet.

**Manufacturer:** Weber Showcase & Fixture Co., Los Angeles, Calif.

**Features:** Designed for merchandising of ice cream and frozen food together with non-refrigerated related items, this case has a big, full-view, sub-zero cabinet topped by three super-structure shelves. Contains 2464 cu. in. of selling space for every square foot of floor space.

BUY FROM YOUR  
REFRIGERATION WHOLESALE

## MUSHROOMS . . .

*Continued from page 32*

centrated on the winter months for their propagation.

Now, however, mushroom growing can be—and is—a year 'round industry, and an important one. Production in 1940, according to Dept. of Agriculture figures, amounted to 40,000,000 pounds, and the business has grown by leaps and bounds since then.

Here, then, is another important market for refrigeration and air conditioning equipment—and a market in which packaged-type units can be employed with very satisfactory results.

One such installation recently was made for the Ohio Mushroom Co., in



Lima, Ohio, by the Komminsk Refrigeration Co. of that city, using two 10-ton self-contained air conditioners and a 20-ton evaporative condenser.

The rate of growth of mushrooms is extremely dependent upon temperature. For example, the commercial variety grows from a tiny button to a full-size mushroom in 22 days at 50 F, ten days at 60 F, and six days at 70 F. Commercial mushroom culture, therefore, is more nearly a controlled industrial process than the growing of any other agricultural crop.

The accepted cultural method of growing mushrooms is intricate and precise. Fertilizer is composted or partially decomposed, and then placed in beds about 5" deep, where it is allowed to generate heat for several days. The house is then cooled down and the propagative material (called spawn) is planted about one foot apart in the beds. About six weeks

from the time of planting, the mushrooms begin to appear, and harvesting continues for about six months. The beds are then emptied, and the entire process is repeated.

In the Ohio Mushroom Co. installation, one 10-ton self-contained air conditioner is used for each set of two rooms. Four branch ducts from each unit run along the ceiling, so that the cooled air will settle slowly toward the bottom of the room.

Mushroom beds, 5½' wide and 72' long, are stacked seven high to a height of about 14'. There are 14

beds per room, and the room is 16' high. The average harvest is figured at approximately 1¾ lb. of mushrooms for every square foot of bed surface during the harvest cycle.

There are three distinct stages of temperature inside the mushroom house:

1. After the beds are first filled with fertilizer, which generates considerable heat, the bed temperature runs between 120 and 140 F. The fertilizer loses moisture during this period, and consequently the room becomes very humid.

## NOW *the excellent* Electrimatic valve line is being made still better

In plain terms the recent acquisition of the Electrimatic valve line by Jas. P. Marsh Corp. means that the finest of refrigeration controls are being made still better.

All of these well designed, well engineered controls are now being manufactured throughout in the new Marsh plant. As a result, the advanced design and engineering of the Electrimatic line is being given the advantage of greater precision in a plant that is manned and tooled for manufacturing equipment of the Electrimatic type.

A few of the Marsh-built Electrimatic controls are illustrated here. Note the popular Type WP condenser water regulator — a direct-acting piston type regulator for Freon, sulphur, and methyl. designed to operate smoothly without chattering. For heavier duty service there is the pilot operated Type WK regulator, and the Type WJ pilot operated regulator for services requiring a tremendous capacity.

**Write us or see your Jobber**

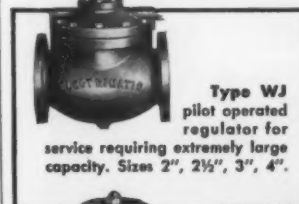
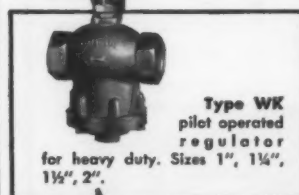
## THE Electrimatic COMPANY

*Sales affiliate of*

JAS. P. MARSH CORPORATION

Dept. P. Skokie, Ill.

The Marsh-built Electrimatic line also includes water regulators for ammonia service; temperature actuated suction throttling valves; temperature actuated flow control valves; packless solenoid valves and other related controls. Ask for complete catalog.



2. During the second period, after the spawn has been planted in the beds, a moderate temperature of 65 to 75 F, with high humidity, is required.

3. The third period, when the mushrooms are developing on the beds, is the most critical of all. Bed temperatures of 58 to 60 F are required, with moderate humidity.

Some of the advantages of packaged-type equipment in commercial applications such as the one at Ohio Mushroom Co. are the same as those in other installations—first cost

and operating cost are low in comparison with central plant systems, and although for exact conditions ductwork is usually used, installation also often is cheaper because of the compactness and mobility of the units.

The fact that each unit can be repaired individually without affecting the rest of the system in case of breakdown is also important in commercial applications, where the failure of the entire system, as might happen with central plant machinery, could cause serious damage.

But a major advantage claimed for packaged-type units, in both comfort applications and commercial installations, is the principle of "zone control." When used in multiple, packaged conditioners are individually governed by thermostats located right on each unit. Thus any variation in temperature in any one zone will be automatically rectified by the thermostat in the unit.

Carl H. Komminsk, Typhoon dealer who installed the equipment for Ohio Mushroom Co., asserts that the "zone control" principle is the most important single feature of this particular job.

"For example," he says, "if scattered clouds should produce a fluctuating heat load on the south wall, a centrally located thermostat would tend to overcool the north side of the building and undercool the south side; but a packaged unit on the south side will automatically adjust for the varying temperatures, and the other units will not be affected."

## REFRIGERATOR HARDWARE

by NATIONAL LOCK

Smartly styled for application on all these refrigeration units

- Back Bars • Milk Coolers • Florist Boxes • Low Temperature Horizontal or Vertical Cabinets • Display Cases • Reach-In Cabinets • Coin-Operated Refrigerated Dispensing Machines • Draft Beer Equipment • Bottled Beverage Coolers • Many Other Types of Refrigerating Equipment

Ask Your Jobber for Information and Prices

NATIONAL LOCK COMPANY

Rockford, Illinois • Refrigerator Hardware Division



**A** MODERN air conditioning system and automatic elevators valued at \$125,000 will be installed in the new Beilinson Hospital in B'nai Brock, on the outskirts of Tel Aviv, it was recently announced by Westinghouse Electric International Co.

Kupath Holin, an Israeli health insurance organization, is building and equipping the new 400-bed hospital unit as the first stage in its program to provide complete medical facilities for its members.

Air conditioning will be provided for five of the structure's eight floors, which contain laboratories, operating rooms, auditoriums, and restaurants. Three refrigerating systems, consisting of three 65-hp compressors, condensers, and water chillers will supply chilled water to 10 central-plant type air conditioning units located throughout the building. Pumps, a cooling tower, grills, and controls are also being furnished.

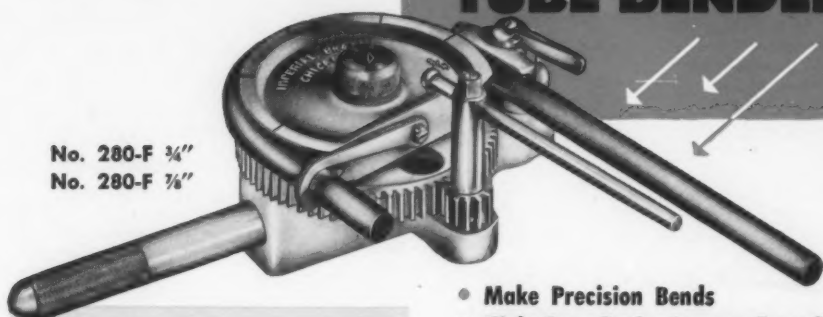
### DRAVO CORP. OPENS OFFICE IN BOSTON

Dravo Corp., Pittsburgh, announces the opening of a Boston sales office at 79 Milk St. This office will handle the sale of Dravo "Counterflo" heaters for industrial and commercial warm air heating and Dravo crane cab conditioners for cooling, filtering, heating and fume removal in industrial crane cabs. R. M. Barnes will be in charge of the office.



# new

## IMPERIAL Gear Type TUBE BENDERS



No. 280-F  $\frac{3}{8}$ "  
No. 280-F  $\frac{1}{2}$ "

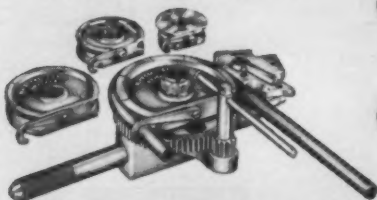
**No. 280-F Individual Benders**  
For One Tubing Size  
Specify O. D. Tube Size When Ordering

O. D. of Tube	Radius to Center of Tube
* $\frac{1}{2}$ "	1 $\frac{5}{8}$ "
* $\frac{5}{8}$ "	2"
$\frac{3}{4}$ "	3"
$\frac{7}{8}$ "	3"
1 $\frac{1}{8}$ "	4"

\*  $\frac{1}{2}$ " and  $\frac{5}{8}$ " Benders do not have handles

**No. 285-F Combination Bender**  
for 4 sizes of tubing— $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ ",  $\frac{3}{4}$ ".

**No. 282-F Combination Bender**  
for 2 sizes of tubing— $\frac{7}{8}$ " and 1  $\frac{1}{8}$ ".



**No. 285-F Bends  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ ",  $\frac{3}{4}$ ".**

Ask for Bulletin No. 382-A

THE IMPERIAL BRASS MFG. CO., 536 S. Racine St., Chicago 7, Ill.

# IMPERIAL

- Make Precision Bends
- High Gear Ratio Assures Easy Bending
- Make Bends Up to 180°
- Compact, Strong, Light in Weight

Compactness, ease of operation and quality of bend are the outstanding features of these new Imperial Gear-Type Tube Benders which are getting such an enthusiastic reception.

Their high gear ratio makes it far easier to make precision bends on small as well as larger sizes of copper, brass, aluminum and steel tubing, including Bundy and thin-wall conduit. Considerably smaller in overall size than comparable lever tube benders.

Because they are open side benders, they can be slipped over tubing at exact point where bend is needed. Tubing will not kink or flatten because of the close precision fit and the fact that bends are formed by an action similar to original drawing of tubing. Can be held in hand or vise.

### PRECISION BENDS MADE EASILY AND QUICKLY

- 1 Retaining hook is dropped over tubing and shoe is brought into closed position by turning shoe locking lever.
- 2 Operating handle is turned clockwise until desired degree of bend is obtained.
- 3 Tubing is removed by backing up operating handle slightly, opening shoe and releasing retaining hook.



Fittings • Valves • Driers • Filters • Floats  
Charging Lines • Tools for Cutting, Flaring,  
Bending, Pinch-Off, Swedging.





The World's Most Efficient

## CONCRETE DRILL

### THE TILDEN ROTARY KONKRETE KORE DRILL



gives lowest cost per foot of concrete drilled because it:

- Drills at 2 to 6 inches per minute
- Drills reinforcing bars and beams in concrete
- Drills up to 30 feet of concrete without resharpening
- Gives straight, clean holes for anchors, conduit, etc.
- Uses ordinary electric drill

Quiet cutting action gives minimum disturbance of surrounding activities.

U.S. Pat. No. 2506474

Tilden drill bits are available in standard sizes of from 1/4" to 4" diameters. Quotations on larger sizes on request.

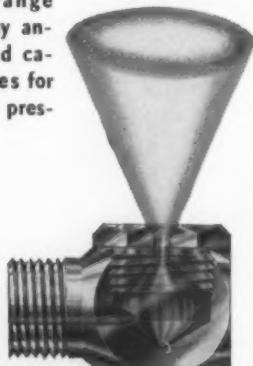
Write today for catalog

with complete details on these revolutionary concrete drill bits.

**TILDEN TOOL MANUFACTURING COMPANY**  
1901 NO. FAIR GATE, PASADENA 3, CALIFORNIA

## SPRAY NOZZLES

Specify Delavan for your spray nozzle needs. Solid cone, hollow cone and flat sprays. Complete range of spray angles and capacities for various pressures.



WRITE NOW FOR  
CATALOG NO. 30

**DELAVAN**  
MANUFACTURING CO.

1009 SIXTH AVENUE  
DES MOINES 13, IOWA

# ABOUT People

The sale of Betz coils in the southwest is now being handled by the Ansul Chemical Co. of Marinette, Wis. Veteran refrigeration salesman **Ray F. Polley**, manager of Ansul's Fort Worth office, is in direct charge of selling activities. Territory is



made up of Texas, Oklahoma, Arkansas, Mississippi, Tennessee. Betz is also being represented by Ansul in Mexico.

**James L. Knight**, assistant manager of engineering, General Appliance and Merchandise Department, General Electric Co., has been appointed a member of the safety regulations committee of National Electrical Manufacturers Association.

Appointment of **George Franck** as director of engineering has been announced by The Imperial Brass Mfg. Co., Chicago. Franck has been with Imperial since 1923 and most recently prior to his new appointment, was chief research engineer for the Imperial organization.



**Edward A. Green** has been appointed staff assistant to A. W. Bartling, general sales manager of General Electric's Small Apparatus Divisions with headquarters at Lynn, Mass. He will be replaced in his former position as manager of sales of the company's Control Divisions

by **L. Dean Fowler**. Formerly manager of the San Jose (Calif.) Motor Sales Division, Small and Medium Motor Divisions, Fowler will now be located at Schenectady, N. Y.

The management of Acme Industries, Inc., has announced the election of **Guy L. Baldwin** as vice president of the company. The announcement followed a recent meeting of the board of company officers. Baldwin has been with Acme Industries for a number of years and has served in various administrative capacities and management functions.



**Kenneth W. Lineberry** has been elected president of Black, Sivalls & Bryson, Inc., to succeed A. J. Smith, who has resigned as president and director of the company. The new BS&B president has been a member of the board of directors since 1946 and recently has been serving as chief executive officer of the company.

Promotion of **Roy W. Maze** to the position of merchandising sales manager of The Marley Co., Inc., has been announced by L. A. Christensen, general sales manager. A graduate of the College of Emporia and Kansas State College, Maze joined



the engineering department of the Aireon Corp. in 1942 and left there

two years later for military service. In 1946 he joined Marley as public relations director, the position he held until his recent promotion.

**Glen J. Christner** has been appointed general manager of the insulation operations of Eagle-Picher Sales Co., Cincinnati. Christner has been with Eagle-Picher since 1932, when he joined the company as New York district manager of the insulation division. For the past year he has been national sales manager of Eagle-Picher's storm window department. Prior to joining Eagle-Picher, he was a sales engineer for Ingersoll-Rand.

Three key appointments in the San Jose (Calif.) Motor Divisions of General Electric's Small and Medium Motor Divisions have been announced by Dwight E. Moorhead, manager of the San Jose Motor Divisions. These are: **Charles Stoeckly** as manager of the sales division, **Carl J. Andersen** as manager of the manufacturing division, and **L. A. March** as manager of the engineering division.

**Alan J. Bronold** has been appointed sales manager for Sterling Electric Motors, Inc., Los Angeles. Bronold will take over the duties of Allen Adams, who due to illness is stepping down from active sales management, but will continue on as secretary-treasurer of the company. Bronold was associated with Vacuum Oil Company prior to 1926. He has been associated with the Westinghouse Electric Corporation since that time, having served in a number of sales and executive capacities—his last position prior to resigning to

come with Sterling being assistant general sales manager in charge of national sales for Sturtevant Div.

Three new appointments to national business sales department of Frigidaire Div. of General Motors are announced by W. F. Switzer, commercial sales manager. **J. F. Calvin**, formerly national business sales representative of Frigidaire's Chicago district, now national business

sales representative in the midwestern territory out of Dayton; **H. T. Buehring**, formerly division manager and national business sales representative in the Fort Worth district, now national business sales representative of the southwestern territory out of Dayton; and **LeRoy J. Krantz**, formerly manager of engineering, installation and air conditioning sales for a refrigeration firm in Dayton, now air conditioning sales engineer for Frigidaire.

## KNOCKS OUT MOISTURE

*to Lower Freeze-Up Levels  
Than any Other Drying Agent*



**DAVISON**

**PA 100\***

REFRIGERATION GRADE SILICA GEL

It's in competition that PA-100 really shows its drying power. For tests made against other refrigerant drying agents prove, beyond a shadow of a doubt, that it can dry refrigerants to lower moisture levels.

Tests also prove PA-100 excels in other departments too. Being completely inert it cannot cause corrosion. In fact, it helps prevent corrosion by removing corrosive

compounds from the system. And, no matter how long it remains in the system PA-100 does not cake, dust, deliquesce, channel refrigerants or cause any other undesirable reaction.

Those are the reasons why your next refrigerant drier order should be for PA-100 . . . in cartridge or bulk can. Your jobber has both!

\*T. M. Reg. App. For

Progress through Chemistry

**THE DAVISON CHEMICAL CORPORATION**



Baltimore 3, Maryland

Pioneers and Developers of Silica Gel

CANADIAN EXCLUSIVE AGENTS FOR DAVISON SILICA GEL:  
CANADIAN INDUSTRIES LIMITED, SALES DIVISION, CHEMICALS DEPT.

## TEACHING PROSPECTS . . .

*Continued from page 37*

He had previously devised a variety of equipment, all designed to show how beer reacted to different conditions and how it could be controlled. First part of the "course" showed how beer is made. It pointed out that beer is the most difficult beverage to draw. Beer was compared with milk—it will get sour, get thick, and breed bacteria, and

will ferment due to the yeast used in its production.

When beer came back in 1932, the "course" further pointed out, there was no modern equipment available to use in drawing and dispensing it. Also, there was no thought of conservation—beer then was cheap—so it could be handled without much regard to cost. This is not the case today. All costs have gone up, and the cost of beer has gone up with them.

The various types of beer dispensing equipment were then explained,

with the advantages and disadvantages of each. It was pointed out that some types of beer coolers do a cooling job, but not the other elements of the full job that must be done.

Persons who handle beer equipment, it was emphasized, must understand the importance of the control of carbonation, and the fact that pressures, if not properly controlled, can play hob with even the most perfectly installed type of equipment. In other words, the story told was that "cold alone is not enough"—that expert knowledge of all the factors entering into satisfactory beer dispensing was necessary if a satisfactory system could be installed.

The equipment used by Wright to put across his points was interesting—and the kind that worked, from later reports. Using a drum of CO<sub>2</sub> gas, he would take "flat" beer and add gas to it, bringing it back to "normal" condition. This was to emphasize the importance of maintaining proper conditions of pressure.

Another of the several devices used to impress the importance of proper pressure on beer distributors and their salesmen was a "balloon" act—balloons fitted with CO<sub>2</sub> gas from a flask of beer heated over a burner to show how this gas goes into and out of beer, depending upon the temperature that is maintained.

Also part of the "school" were display boards showing important points in the discussions, and a map showing "wet" and "dry" Ohio counties. There was a great deal more to the educational program than this—but it all added up to one important thing, so far as Wright's organization was concerned. It pointed up his company as the No. 1 "expert" in the area on beer dispensing equipment, and it has worked out, profitably, in terms of sales and service work on this hard-to-handle type of refrigerated equipment.

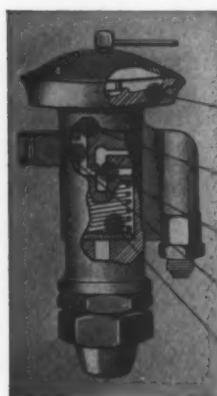
## REVERE RAISES PRICES OF COPPER PRODUCTS

Price increases of 1½ cents per lb. on all pure copper products and 1 cent per lb. on copper alloy products was announced recently by Revere Copper & Brass, Inc.

Increased costs of scrap copper and imposition of a \$40 per ton tax on imported copper as of July 1 have necessitated the raise.

## The only product that can say this . . . REACHES AND DESTROYS

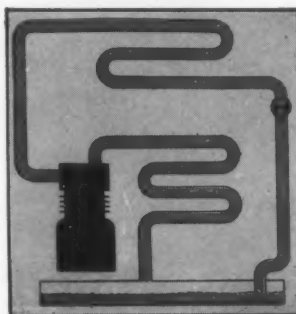
## MOISTURE <sup>TRAPPED</sup> IN EXPANSION VALVES



Why does Thawzone usually work even when other methods fail? One reason is that no matter where the moisture is, Thawzone finds it. Thawzone is a liquid that travels everywhere moisture can go. Even moisture trapped in the expansion valve, on the tubing walls, in the receiver, highside or lowside is reached by Thawzone.

### An Eliminator Instead Of a Holder

Moisture that comes in contact with Thawzone is gone for good. It cannot return because it's no longer water. Regardless of how hot or cold the unit gets, it is impossible for that moisture to re-form or break loose. This means fewer callbacks.



Reaches the Entire Unit  
in 2 Minutes!

Thawzone contacts *all* the refrigerant quickly. Saves your time. Use Thawzone in "Freons", methyl chloride, methylene chloride, "Carrene" or isobutane. Use 1 teaspoonful (½ oz.) per pound of refrigerant. Your wholesaler has Thawzone. Highside Chemicals Co., Clifton, N. J.

## THAWZONE®

The Only Product That  
Destroys Water . . .  
and Reaches All of it

## "DR. OF BUSINESS" . . .

Continued from page 25

ties, occupies a prominent spot on the company's roster of customers.

"Our store layout service encompasses practically every step but actual financing of the store," Ludwig smiles. "Almost all of our salesmen are well enough qualified that they can take over an old, financially-ailing store, re-design it, install the fixtures, and put it back on a paying basis. We have had to do just that in many instances, and invariably we wind up with a well-pleased store proprietor who is an enthusiastic booster and a constantly dependable advertising asset."

Of course, not all of the sales which Ludwig-Patterson has rung up are

**"HOME Freezers, Their Selection and Use"** is the title of a new booklet published by the U.S. Department of Agriculture's Bureau of Nutrition and Home Economics. This pamphlet, which retails for 10 cents a copy, fully covers all aspects of owning a home freezer, including operating cost, most efficient use, selection of the freezer, size of unit required, and location in the home.

In the section on selecting the freezer, cutaway drawings of both the upright and chest type, various door seals, a diagram of the refrigeration cycle, and illustrations of both open type and hermetic compressors are employed to clarify the text. Also covered are defrosting alarm signals, proper packaging, loading, and what to do when the unit fails to operate.

based on this type of arduous store-designing work. While actually there are six men in the organization who have gone through special training for this purpose, only about one job in four requires "engineering" above and beyond the refrigeration installation itself.

However, when such special attention is required, there are no special charges, and the store proprietor pays no premium for Ludwig-Patterson's expert advice. Instead, whichever man is on the job consults with the sales engineer, and there is a "design conference" between any number of men required, until the desired result is reached.

Typical of the installations developed in this manner are the "pocket-size" supermarkets operated by Lloyd

King in the Denver area. These markets claim the largest amount of self-service refrigeration per square foot of any supermarket in the Rocky Mountain states, and sales run considerably higher in frozen foods, ice cream, frozen baked goods, self-serve meats, produce, etc., than in other stores of similar size. The owner of these markets gives Ludwig-Patterson full credit for their compact, sales-producing design.

In addition to its engineering service and custom construction department, the firm counts heavily

upon its well staffed service department to maintain customer goodwill. The company operates a five-truck fleet, and has seven expert servicemen, experienced with all phases of refrigeration, who are at "speed limit call" for any commercial refrigeration user.

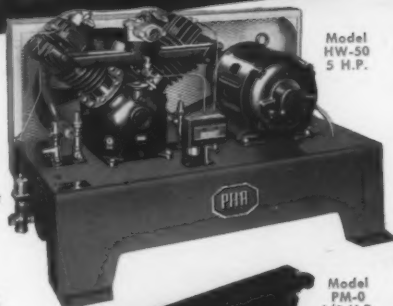
## USAIRCO EXPORT AGENT

Consolidated Export Co., Minneapolis, has been appointed to handle all foreign sales of United States Air Conditioning Co. products.

# PAR and PARmetic...

**TWO GREAT NAMES with a Single Purpose . . . The BEST in Refrigeration!**

Shop from coast-to-coast—and you'll find PAR and PARmetic lines preferred for a variety of reasons. They're top quality at competitive prices; they give quiet, rugged performance under exacting conditions; they require a minimum of maintenance; they're attractive to look at; they're field serviceable; and each line comes in a range of sizes that gives a "tailor-made" unit for commercial or home refrigeration problems. When you buy or specify, make it PAR or PARmetic. Dollar for dollar, it's your best refrigeration buy.



Model HW-50  
5 H.P.



Model PM-6  
1/8 H.P.

BY COMPARISON — YOU'LL BUY PAR and PARmetic



PAR AIR COMPRESSORS



PAR REFRIGERATION COMPRESSORS



WRAP-O-MATIC CANDY & COOKIE WRAPPING MACHINES



LYNCH CORPORATION PAR COMPRESSOR DIVISION TOLEDO, OHIO



MORPAC PAPER PACKAGING MACHINES



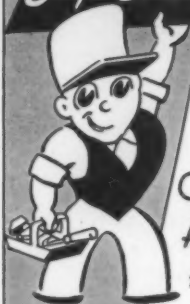
MORPAC BUTTER & OLIVE CARTONING MACHINES



GLASS FORMING MACHINES



Says **GASKET JOE**



HERE'S  
**YOUR**  
QUESTION—  
ALWAYS  
ASK IT!

"DID I LOOK  
AT THAT  
DOOR  
GASKET?"

**JARROW PRODUCTS**

420 N. LA SALLE ST., CHICAGO 10, ILLINOIS

# CONTRACTORS

News • Activities • Plans

## Calif. Contractors Beat Plumbing Clause in Code

A PROPOSAL to amend the section of the California Administrative Code defining a plumbing contractor has been dismissed by the Contractors' State License Board.

The proposal, advanced by the California State Master Plumbers Association, was vigorously opposed by the Refrigeration Contractors Association of Northern California and other groups.

It would have changed the definition of a plumbing contractor to include the phrase (in italics): "... by providing a permanent means for supply of safe, pure, and wholesome water, to any and all fixtures or ap-

pliances which require any solid connection to the water system, either with fresh water in, or waste water out. . . ."

The board rejected the proposed amendment at a recent statutory meeting held following two public



hearings of the matter. It gave the following reasons for its action:

"The proposal does not have the full support of the proponents and furthermore, they are divided in the matter.

"Were such a proposal adopted each of the classifications of contractors would seek from the board amendment of their particular section of the Administrative Code.

"The protection of the public is not involved as local ordinances already require permit and inspection where 'solid connections' are made.

"The exemption as contained in Section 7048 of the Business and Professions Code (\$100 exemption) would except the 'solid connection' in practically all instances where the connection of appliances is concerned.

"The adoption of the proposed

"GET GOING, MISTER!  
—GET THIS LINE!"



**Lipman**  
REFRIGERATION and  
AIR CONDITIONING

Get a complete line . . . get Lipman . . . includes water, air, and combination Refrigeration Units . . . PLUS the finest Air Conditioning Equipment! Lipman gives you a full sales kit . . . products to meet every sale! Mail coupon today!

General Refrigeration Division  
YATES AMERICAN MACHINE CO.  
Beloit, Wisconsin

Gentlemen: I am interested in making money selling air conditioning . . . the Easy Lipman way. Send details.

Company Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Individual Name \_\_\_\_\_

Title \_\_\_\_\_

Write for  
**MERCHANDISING  
Plan!**



amendment would cause chaos and confusion among many of the classifications of contractors and would be impossible of enforcement.

"The proposed amendment, if adopted, would be a nullity in view of the provisions of Section 7059 of the Business and Professions Code ('incidental and supplemental')."

Opposition to the proposal had been spearheaded by the refrigeration contractor association, which filed written objections with the board on April 5. The proposal was protested by representatives of the association and several other groups at a subcommittee of the board on May 22.

The board's reasons for dismissing the proposal were substantially the same as those which were advanced by the groups protesting the action.

#### CHICAGO CONTRACTOR HAS RECORD YEAR

Air conditioning sales have been unusually large in the Chicago area in spite of unfavorable weather and some shortage of equipment, according to H. E. Wheeler, president of Air Comfort Corp., installers of Carrier air conditioning.

"Our contract department," said Wheeler, "which installs the heavier equipment, has closed over a million dollars in business this year, a new high for this department. As a celebration the sales department is being taken to Syracuse to see Carrier's new factory."

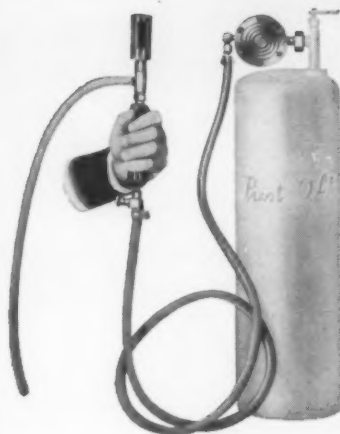
#### COOLING CONTRACTOR ADDS HEATING LINE

Ross & Witmer, Inc., Charlotte, N. C., air conditioning engineers and contractors, has added Delco-Heat heating equipment to its lines of products. The company for some years has handled Carrier air conditioning equipment in the North Carolina territory.

#### NEW FIRM FORMED

A new air conditioning, refrigeration and heating firm in Mobile, Ala., Johnson & Son, Inc., recently filed incorporation papers. Authorized capital was listed at \$15,000 and officers are Frank L. Johnson, Gulfport, Miss., president; Lee W. Johnson, Mobile, vice president; and Don L. Monjo, Mobile, secretary-treasurer.

## Prest-O-Lite HALIDE Leak Detector



**Quick**—Always ready for use. Lights instantly. Locates exact source of leak with a few sweeps of test hose.

**Sure**—Reacts instantly to smallest concentrations of all non-combustible halide refrigerant gases commonly used in domestic and industrial systems.

**Simple**—Easy to use anywhere. No delicate parts to get out of order.

Price (less tank) . . . **\$14.50**

"Prest-O-Lite" is a registered trademark of a Unit of Union Carbide and Carbon Corporation.

See your jobber or write us for further information. The Linde Air Products Company, 30 East 42nd Street, New York 17, N. Y. In Canada: Dominion Oxygen Company, Limited, Toronto.

**Order from your local Jobber**

# Servicemen!

**FOR MAXIMUM  
EFFICIENCY  
USE**

**CHICAGO SEALS AND  
VALVE PLATES**



Chicago Seals  
MODERN DESIGN

**CHICAGO  
SEAL CO.**

332 S. HOYNE AVE.  
CHICAGO 12, ILL.

## LOOK to LARKIN

**For Efficiency**



**LARKIN HALF-TURRET HUMI-TEMP**

Efficient operation makes a product easier to sell on one hand; builds solid customer satisfaction on the other. Precision engineering—only the best materials—skilled craftsmanship—and almost 25 years experience in commercial and industrial refrigeration—all add up to higher efficiency for every Larkin product. And this means lower operating costs — important to buyer and seller alike.

Manufacturers of the original Cross-Fin Coil — Humi-Temp Units — Evaporative and Air Cooled Condensers — Air Conditioning Units and Coils — Direct Expansion Water Coolers — Steel Vacuum Plate Coils — Heat Exchangers.

WATCHDOG OF THE NATION'S FOOD SUPPLY

**LARKIN COILS**

519 MEMORIAL DR., S.E. • ATLANTA, GA.

# TEXACO CAPELLA OILS



## THEY KEEP


compressors clean



## YOU KEEP

customers happy



 ILS for refrigerating compressors have two jobs to do. They must (1) assure trouble-free operation and (2) keep both compressor and system clean. *Texaco Capella Oils* do both jobs—and do them well.

*Texaco Capella Oils* are especially made for compressor lubrication. They are highly refined and exceptionally stable, with high resistance to oxidation. Thus, they keep compressors free of carbon, gum and sludge formations. In addition, *Texaco Capella Oils*

are moisture-free, with very low pour tests, and do not react with refrigerants. Systems stay clean.

You can get *Texaco Capella Oils* in a complete range of viscosities . . . for every type and size of compressor. They come in convenient sealed containers—1-quart, 1-gallon and 5-gallon sizes. Leading compressor manufacturers approve them. Let *Texaco Capella Oils* help you build your business by making satisfied customers. The Texas Company, 135 East 42nd Street, New York 17, N. Y.



## TEXACO Capella Oils

FOR ALL AIR CONDITIONING AND REFRIGERATING EQUIPMENT



TUNE IN . . . TEXACO STAR THEATER starring MILTON BERLE on television every Tuesday night. See newspaper for time and station.

# THE PRACTICAL Refrigeration Applications MANUAL ... by Harold Smith

**T**HE Practical Refrigeration Applications Manual extends a helping hand to those refrigeration and air conditioning men who occasionally encounter field engineering problems too tough for them to handle. Space limitations make it impossible to give complete detailed information covering each step necessary for the installation or erection of refrigeration equipment, insulation or fixtures. It is necessary to assume that those readers who request assistance with their problems are familiar with these basic fundamentals. If they are not, it is suggested that they seek this advice from their sources of supply when purchasing the materials which they intend to use on the job. Most suppliers are equipped to furnish such information. Readers are urged to submit their problems to this department. Each letter of inquiry will be answered personally by the author. The most interesting ones will be published in these columns. All problems should be clearly and completely stated and addressed to: **COMMERCIAL REFRIGERATION AND AIR CONDITIONING, Manual Dept., 1240 Ontario St., Cleveland 13, Ohio.**

## PROBLEM

**I** AM in the process of constructing a low temperature cabinet of a particular size, determined by the space it must occupy. Due to the wide difference of opinion among service men to whom I have talked as to certain pertinent requirements, I am asking your help on the items listed below.

"The inner compartment is 13 1/2 x 21 x 28 inches high, (approx. 4 1/2 cu. ft.). I have allowed space in the outer compartment for 4 inches of insulation on sides and 6 inches on the bottom. I intend to solder sweat copper tubing to the outside of the inner compartment.

"This freezer will be used for food storage rather than for freezing, maintaining zero degree temperature. Can you supply me with the following information?

"1. The size and length of the tubing.

"2. The spacing and pattern of the tubing coil.

"3. The size of compressor unit.

"4. The size of receiver-condenser.

"5. Is water cooled or air cooled preferable.

"6. Is Freon the refrigerant to use.

"7. Type of insulation.

"8. Size and type expansion valve.

"9. Is spun glass as used in house insulation the same as that used in refrigeration.

"10. Size and type of drier."

## SOLUTION

**W**E would suggest the following in the order of your questions:

1. We would suggest the use of 50 feet of 1/2-inch tubing flattened slightly and soldered securely to the outside of the inside compartment.

2. We would run the coil horizontally around the side of the compartment spacing the rows an inch apart.

3. We would recommend the use of a 1/4-hp air cooled low temperature condensing unit.

4. The receiver condenser would be included as part of the condensing unit and a standard receiver and air cooled condenser as is included in the assembly of a 1/4-hp condensing unit should be used.

5. We would think that an air cooled condensing unit would be most satisfactory for use on this job.

6. We would recommend the use of Freon-12 as the refrigerant on this assembly.

7. Regarding the insulation we hesitate to make recommendations. There are so many good insulation materials available. You can use cork, mineral wool, spun glass or any of the standard insulation materials recommended for low temperature refrigeration work. They should, of course, be of proper density and properly bonded against moisture, as moisture can become a very serious problem in low temperature

equipment. Consult your insulation source of supply for the most satisfactory method of insulating this type equipment.

8. You can use either a standard automatic expansion valve or a small 1/4 to 1/2-ton Freon thermostatic expansion valve, whichever suits your requirements best.

9. We are not sure whether the spun glass insulation material used in house insulation is the same as is used in refrigeration but we are inclined to believe that there is a difference. The suppliers of this material can quickly answer this question for you.

10. We would use a small type silica gel drier of the type that your wholesaler or the compressor manufacturer recommends for use with whatever condensing unit you decide to use on this installation.

## FRESH AIR FOR AIRFARERS

(See cover photo)

**T**HE largest mobile aircraft heating and air conditioning unit ever used by a commercial airline has been placed in operation by United Air Lines to further increase passenger comfort while planes are on the ground. Five units will be purchased by the airline from Chrysler Airtemp Corp. and placed at key points on the carrier's 13,250-mile system, according to United's announcement.

With a relative cooling capacity of 28 tons, 10 tons greater than the next largest unit in airline service, the conditioner also can be adapted to heat cabin interiors in the winter time.

Designed to cool 2,000 cfm of air at normal operating speeds, the refrigeration unit brings cabin temperatures down to a comfortable level in less time than was previously required.

The complete unit, with hose attached, is mounted on a 1 1/2-ton International cab-forward truck chassis. The body, specially designed by Fruehauf, can be entirely removed in less than half an hour to facilitate interior equipment maintenance.

## PENN'S BOSTON OFFICE MOVES TO NEW LOCATION

The Boston district office of Penn Electric Switch Co. has been moved to 313 Washington St., Newton 58, Mass. A. W. Barr is Boston district manager.

**BUY FROM YOUR REFRIGERATION WHOLESALER**

# ACRMA-REMA Summary of Compressor Shipments

THE FIRST "ACRMA-REMA Statistical Program Summary" covering the shipments of refrigeration compressors (for refrigerants other than ammonia) for use other than in household refrigerators, was released recently. The data covered the first four months of 1950.

It reveals that more than 500,000 units were shipped in this period, but complete totals are not given in some classifications so as not to reveal the operations of individual companies.

Figures are reported by three types of compressors: (1) hermetic; (2) air-cooled open type; (3) water-cooled open type. Units of 1/5 through 5 hp are included. The report is further divided by machines sold in unitary (end use) products, and those sold separately as compressor bodies, compressors, or condensing units.

Figures show increases for each of the year's first four months: 84,760 in January; 104,356 in February; 152,570 in March; and 165,043 in April.

Horsepower	SEALED-TYPE (HERMETIC OR CLOSED)					OPEN-TYPE, AIR-COOLED					OPEN-TYPE, WATER-COOLED												
	Continental U. S.			Export	Grand Total	Continental U. S.			Export	Grand Total	Continental U. S.			Export	Grand Total								
	Mfrs.	Non-Mfrs.	Total			Mfrs.	Non-Mfrs.	Total			Mfrs.	Non-Mfrs.	Total										
JANUARY, 1950																							
SOLD IN UNITARY (END-USE) PRODUCTS																							
1/5 & Less	xxx	xxx	3,825	1,691	22,780	xxx	xxx	141	*	*	xxx	xxx	118	*	*								
1/4	xxx	xxx	7,341			xxx	xxx				xxx	xxx											
1/3	xxx	xxx	1,767			xxx	xxx				xxx	xxx											
1/2	xxx	xxx	158			xxx	xxx				xxx	xxx											
3/4	xxx	xxx	7,998			xxx	xxx				xxx	xxx											
1	xxx	xxx				xxx	xxx				xxx	xxx											
1 1/2	xxx	xxx				xxx	xxx				xxx	xxx											
2	xxx	xxx				xxx	xxx				xxx	xxx											
3	xxx	xxx				xxx	xxx				xxx	xxx											
5	xxx	xxx				xxx	xxx				xxx	xxx											
Sub-Total	xxx	xxx	21,089	1,691	22,780	xxx	xxx	141	*	*	xxx	xxx	658	*	*								
SOLD AS COMPRESSOR BODIES, COMPRESSORS, OR CONDENSING UNITS																							
1/5 & Less	10,205	567	28,678	2,085	47,040	2,100	128	2,766	189	8,264	43	223	473	43	1,221								
1/4	17,906	430	13,359			538	538	2,711	309	3,035													
1/3	12,929					1,560	1,151		324														
1/2	923					1,290	1,197		226														
3/4	1,498		497			2,918	224		761							54							
1		205					572		777							104							
1 1/2		21					294		315							29							
2		320					290		610							234							
3		147					119		266							47							
5		14					14		327							33							
Sub-Total	43,461	1,494	44,955	2,085	47,040	5,867	5,064	10,931	1,516	12,447	273	1,378	1,651	43	1,694								
Grand Total	xxx	xxx	66,044	3,776	69,820	xxx	xxx	11,072	*	*	xxx	xxx	2,309	*	*								
FEBRUARY, 1950																							
SOLD IN UNITARY (END-USE) PRODUCTS																							
1/5 & Less	xxx	xxx	5,402	165	5,567	xxx	xxx	61	*	*	xxx	xxx	164	*	*								
1/4	xxx	xxx	10,264	163	15,131	xxx	xxx	140			xxx	xxx											
1/3	xxx	xxx	2,396			xxx	xxx				xxx	xxx											
1/2	xxx	xxx	1,284			xxx	xxx				xxx	xxx											
3/4	xxx	xxx				xxx	xxx				xxx	xxx											
1	xxx	xxx				xxx	xxx				xxx	xxx											
1 1/2	xxx	xxx				xxx	xxx				xxx	xxx											
2	xxx	xxx				xxx	xxx				xxx	xxx											
3	xxx	xxx	1,000	24		xxx	xxx				xxx	xxx				716							
5	xxx	xxx				xxx	xxx				xxx	xxx											
Sub-Total	xxx	xxx	20,346	352	20,698	xxx	xxx	201	*	*	xxx	xxx	880	*	*								
SOLD AS COMPRESSOR BODIES, COMPRESSORS, OR CONDENSING UNITS																							
1/5 & Less	15,948	602	36,785	6,004	43,601	1,196	784	1,980	178	2,750	56	56	47	695									
1/4	20,235	633	13,999	812	24,123	1,584	1,152	2,736	592	3,235													
1/3	13,366			303		987	1,368	2,355	499														
1/2	8,978			9,821		324	794	1,118	318														
3/4	843					559	538	1,097	109														
1						71	325	396	30														
1 1/2						186	351	537	117														
2						162	236	398	119														
3																							
5																							
Sub-Total	58,527	2,078	60,605	7,119	67,724	5,069	5,548	10,617	2,135	12,752	314	1,687	2,001	100	2,101								
Grand Total	xxx	xxx	80,951	7,471	88,422	xxx	xxx	10,818	*	*	xxx	xxx	2,881	*	*								



Horsepower	SEALED-TYPE (HERMETIC OR CLOSED)					OPEN-TYPE, AIR-COOLED					OPEN-TYPE, WATER-COOLED				
	Continental U. S.			Export	Grand Total	Continental U. S.			Export	Grand Total	Continental U. S.			Export	Grand Total
	Mfrs.	Non-Mfrs.	Total			Mfrs.	Non-Mfrs.	Total			Mfrs.	Non-Mfrs.	Total		
MARCH, 1950															
SOLD IN UNITARY (END-USE) PRODUCTS															
1/8 & Less	xxx	xxx	8,017	353	8,370	xxx	xxx		*		xxx	xxx			
1/4	xxx	xxx	12,464			xxx	xxx				xxx	xxx			
1/2	xxx	xxx	8,872			xxx	xxx				xxx	xxx			
3/4	xxx	xxx				xxx	xxx				xxx	xxx			
1	xxx	xxx				xxx	xxx	426	*		xxx	xxx	255	*	*
1 1/2	xxx	xxx	10,613	273	32,222	xxx	xxx				xxx	xxx			
2	xxx	xxx				xxx	xxx				xxx	xxx			
3	xxx	xxx				xxx	xxx				xxx	xxx	1,038		
5	xxx	xxx				xxx	xxx				xxx	xxx			
Sub-Total	xxx	xxx	39,966	626	40,592	xxx	xxx	426	*	*	xxx	xxx	1,293	*	*
SOLD AS COMPRESSOR BODIES, COMPRESSORS, OR CONDENSING UNITS															
1/8 & Less	24,330	456	24,786	8,349	33,135	1,247	239	2,155	157	2,988					
1/4	27,404	754	28,158	677	28,835		669		676						
1/2	14,312	1,316	15,628			2,213	1,485	3,698	544	4,242					
3/4						790	1,710	2,500	558	3,058	131	349	788		
1				559		345	1,106	1,451	67	1,518					
1 1/2	13,290	952	14,242		30,429	318	834	1,152	161	1,313	88	306	443		
2						90	537	627	49	676	87	349	723	137	2,724
3						310	516	826	80	906		287			
5						142	249	391	44	435	131	299	633		
Sub-Total	79,336	3,478	82,814	9,585	92,399	5,455	7,345	12,800	2,336	15,136	437	2,150	2,587	137	2,724
Grand Total	xxx	xxx	122,780	10,211	132,991	xxx	xxx	13,226	*	*	xxx	xxx	3,880	*	*
APRIL, 1950															
SOLD IN UNITARY (END-USE) PRODUCTS															
1/8 & Less	xxx	xxx	7,528	513		xxx	xxx	50	*		xxx	xxx			
1/4	xxx	xxx	12,855			xxx	xxx				xxx	xxx			
1/2	xxx	xxx	11,700			xxx	xxx				xxx	xxx			
3/4	xxx	xxx				xxx	xxx				xxx	xxx			
1	xxx	xxx				xxx	xxx		*		xxx	xxx	293	*	*
1 1/2	xxx	xxx	6,976	282	41,350	xxx	xxx	334			xxx	xxx			
2	xxx	xxx				xxx	xxx				xxx	xxx			
3	xxx	xxx				xxx	xxx				xxx	xxx			
5	xxx	xxx	1,496			xxx	xxx				xxx	xxx	1,590		
Sub-Total	xxx	xxx	40,555	795	41,350	xxx	xxx	384	*	*	xxx	xxx	1,883	*	*
SOLD AS COMPRESSOR BODIES, COMPRESSORS, OR CONDENSING UNITS															
1/8 & Less	28,413	1,995	54,165	6,146	60,836	1,179	221	2,209	266	3,033					
1/4	23,757			525			809		558						
1/2	20,132	1,350	21,482			2,219	1,572	3,791	672	4,463					
3/4						1,089	1,944	3,033	502	3,535	84	346	730	28	758
1						492	1,295	1,787	109	1,896					
1 1/2	16,743	1,808	18,551	712	40,745	1,162	730	1,892	164	2,056					
2						100	550	650	75	725	369	300	1,319	72	
3						281	459	740	84	824		346			
5						233	205	438	63	501	116	309	636	27	2,054
Sub-Total	89,045	5,153	94,198	7,383	101,581	6,755	7,785	14,540	2,493	17,033	569	2,116	2,685	127	2,812
Grand Total	xxx	xxx	134,753	8,178	142,931	xxx	xxx	14,924	*	*	xxx	xxx	4,568	*	*

\* Figures omitted to avoid disclosure of operations of individual companies.

NOTES: Totals shown above DO NOT include compressor bodies shipped for or incorporated in HOUSEHOLD REFRIGERATORS. In order to avoid disclosing the operations of individual companies, some data for two or more sizes of units are combined.

## CARRIER PROFIT UP

Net profit of Carrier Corp. for the 12 months ended July 31, 1950 was \$2,483,769, or \$3.83 per common share, as compared with \$1,668,743, or \$2.44 per common share, for the preceding similar period.

Completed business totaled \$54,161,991. The comparable figure for

the 12 months ended July 31, 1949 was \$50,465,798. New orders were booked in the amount of \$53,417,159. The total for the preceding 12 months was \$46,155,509.

**BUY FROM YOUR  
REFRIGERATION WHOLESALE**

## CHASE BRASS APPOINTS NEW L.A. BRANCH MGR.

Appointment of Raymond A. Sternthall to the position of Branch Manager of their Los Angeles office and warehouse has been announced by Chase Brass & Copper Co. Sternthall succeeds the late T. Franklin Day.



# Your Ranco Wholesaler HAS IT!

Save time. Save shopping all over town for the right replacement control! See the new RANCO REPLACEMENT REFERENCE No. 1244 right on your Ranco wholesaler's counter—or obtain a copy from him for your own files.

Only Ranco wholesalers have this com-

plete bulletin listing Ranco Replacements for more than 4,000 controls... the most complete line ever supplied to the trade. You'll find an alphabetical listing of refrigeration manufacturers, plus trade names and the Ranco Replacement Control code number.



## TYPE "O" CONTROLS FOR

- water coolers
- milk cooler cabinets
- ice cream cabinets
- meat cases
- walk-in coolers
- beverage coolers
- florists display cases

# Ranco Inc.

COLUMBUS 1, OHIO

WORLD'S LARGEST MANUFACTURERS OF REFRIGERATION CONTROLS

## HERE'S HOW!

Edited by  
Warren F. Farr

### Mufflers Cut Noise of Evaporative Condensers

It has been brought to our attention that some of our readers are not acquainted with the use of mufflers in the hot gas lines of evaporative condensers.

When excessively long lines are installed, a pronounced gas noise may develop and in some cases, excessive vibrations occur. Although the refrigerant lines are properly sized with respect to refrigerant flow, this noise and vibration is a function of the piping and occurs when the frequency of the gases is the same as the resonant frequency of the piping.

Due to the difficulty of pre-determining the resonant frequency, it is becoming generally accepted practice to install mufflers whenever the evaporative condenser is more than ten feet from the compressor, as the expense of installing a muffler at the time of erecting the piping is insignificant in comparison to installing one should it prove necessary after the job is complete.

A rule of thumb which has been successfully employed in the field is

*I do it  
this way...*

**P**ROBABLY every serviceman at one time or another has found the reaction plate burned out of his leak detector. This usually happens, of course, just when you need the leak detector most.

When I don't have another plate handy I flare a short piece of 1/4-inch tubing and drop it into the hole of the old plate. This will keep the leak detector functioning until you are able to get another plate.

Vernon L. DuPriest,  
McAlester, Okla.

*I do it  
this way...*

**O**FTEN when cutting through insulated walls of refrigerator cabinets, or other walls inaccessible from the inside, a serviceman has need of an extension adapter for the shank of his hole cutting saw. I contrived such a device by welding one



end of a 3/16-inch Allen wrench into the end of a short section of tubing and by inserting a set screw near the other end of this tube. Thus, by slipping the open end of the tubing over the shaft of the hole saw and tightening the set screw, a very serviceable extension is provided.

Bill Snider,  
Cincinnati, Ohio.

to construct a chamber about five times the cubic displacement of the compressor. If baffles are inserted, care must be taken so that they will not entrap oil. The muffler should be installed in a horizontal run as near the compressor as possible.

### Top or Bottom Feed?

**Question:** On cross fin coils in butcher boxes, is it advisable to use top feed or bottom feed?

**Answer:** When using bottom feed, there may be some difficulty in getting cycle defrosting and ice may form on the lower part of the coil. Using a top feed in carrying the suction line upwards would give much better performance and positive defrosting cycles.

### A Good Parts Stock Helps Your Service

A recent issue of "The Climate Chart", a publication issued to its sales organization by Worthington Pump & Machinery Corp., has a bit of advice in it that merits repeating. This advice has to do with the importance of keeping an adequate stock of parts on hand so you can carry out an adequate service function.

Most service companies, we know, rely on their Refrigeration Parts Wholesalers for virtually all their replacement needs. But it isn't fair to expect your Wholesaler to assume the burden of carrying *all* your parts for you.

An adequate supply of replacement parts, on hand in your own shop, is a basic requirement of a

*I do it  
this way...*

**S**OMETIMES it is necessary to discharge a system having a water-cooled condenser-receiver, such as a shell-and-tube condenser. There is always danger when discharging a system of this type of bursting a tube in the receiver due to the water freezing. Opening the manual adjustment of the water regulating valve to allow water to flow through the receiver while discharging is no positive guarantee against a freeze-up, as the water flow will slow up considerably as the pressure in the receiver drops.

However, if a warm refrigerant drum is connected to the bellows of the water regulating valve, with the manual adjustment open, a full flow of water through the receiver will be obtained, eliminating the possibility of a freeze-up in the receiver tubes.

C. E. Andrews, Hermansville, Md.

NEW HIP-POCKET TOOL

# MAKES 36 JOBS EASIER



**\$42.75**

Complete with leather case and voltage test lead

**AMPROBE**

snap-on volt-ammeter

reads current without  
breaking circuit or  
touching wires!

Look what you can do with this one pocket-size instrument: Determine load conditions without having to shut down equipment. Spot motor overloads and underloads. Diagnose trouble calls faster, under actual load. Measure voltage at motor terminals. Set overload relays. Load balancing, etc.

## Here's how the AMPROBE works:

No need to shut down equipment to make the cumbersome ammeter connections. The Amprobe measures current without touching wires. You just press trigger to open jaws; then release to close around one of the wires. That's all! For voltage readings, flip the switch and plug in test leads.

### SO COMPACT, IT FITS IN YOUR POCKET

- 1/2 the usual size — only 7"l
- 1/3 the usual weight — only 14 oz.l
- 1/2 the usual price — only \$42.75!

#### MODEL A-6

Measures 5 current ranges and 2 A.C. voltage ranges!  
Amps: 10/25/50/100/250 Volts: 150/600  
(2 other popular models also available)

Send for 16-page manual: "How to Make Your Job Easier With An AMPROBE". Pyramid Instrument Corp., 49 Howard Street, N. Y. 13, N. Y. (Export Dept.: Morhan Exporting Corp., 458 Broadway, N. Y. 13. Cable: Morhanex).

**AMPROBE**

A PYRAMID INSTRUMENT

See it today at the better electrical distributors

good service department. It's not necessary to carry an overly large inventory—but you should, by all means, keep on hand an adequate supply of the faster moving parts like valves, valve plates, seals, gaskets, water regulating valves, expansion valves, controls and bearings.

Compressors, one model in each of the most-used sizes, and a small stock of coils in the popular ranges, also should be stocked if your own personal parts department is to be up-to-snuff. If you'll survey the equipment your customers now have, it won't take you long to compile an inventory list that will see you through those hot-shot emergency calls.

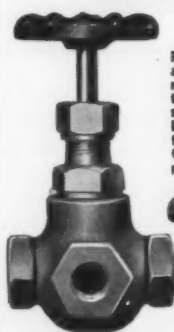
Your Parts Jobber will thank you, too—for you'll be helping him to do a better job of serving you. He isn't a mind-reader, you know—or a millionaire, either.

## Making Pliers Shock-Proof

Refrigerator door seal material can be used to make your cutting pliers shock-proof. All you need to do is to cut the pieces to the desired length, and slip them over the plier handles.

## SHANK REFRIGERATION PRODUCTS

Recognized as the  
Symbol of Quality!

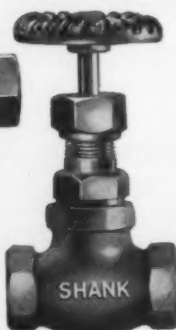


**Semi-Steel  
Shut-Off Valve**

Highest grade non-porous metal—full size ports—clean cut threads. Back seated stem—Shank design base—perfect alignment. Long life packing ring.

### 3-Way Dual Shut-Off Valve

For use where Refrigeration Codes require dual relief valve installations. Stainless steel stem. Indicator plate on hand wheel shows position of valve shut-off. Completely rust-proofed.



IF YOUR JOBBER DOESN'T STOCK—  
WRITE

**CYRUS SHANK CO.**

631 W. Jackson Blvd.

Chicago 6, Ill.

## THEY ALL BOOST PROFITS

Unexcelled replacement parts and hermetic servicing equipment which help you to diagnose compressor troubles quickly and easily. . . . Eliminate costly call-back service. . . . Insure customer satisfaction.



### CYLINDER VANES ROTORS

Matched set of tool hardened replacement parts for all Coldspot compressors having 15/32 shafts. Available in sizes 1", 1 1/4" and 1 1/2". Prices for complete sets.

Lots of 1—\$13.50 ea. Lots of 3—\$12.83 ea.



### CHECK VALVES

Job proved Coldspot replacement check valves.

Price—\$2.00 ea.

Lots of 10—\$1.80 ea.

### BELLOWS SEAL

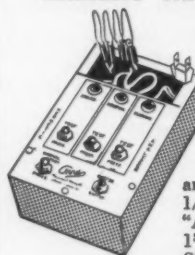
Outstanding bellows seal replacement unit for Coldspot having 15/32 shaft. A complete unit of sylphon bellows balanced seal and steel coil spring. Price—\$3.00 ea.

Lots of 10—\$2.85

Lots of 50—\$2.70



### HERMETIC UNIT ANALYZER



"Annie", our hermetic unit analyzer will quickly and positively indicate the nature of any defects in the electrical system.

"Annie" is designed to check and start units up to 1/3 H.P. inclusive. "Annie" weighs only 1 1/4 lbs.

Size 3"x5"x8".

Price \$15.00

### TAPALINE HERMETIC GAUGE PORT

An easy to install permanent gauge port on hermetically sealed units. Available in 3 sizes to fit 1/4"—5/16"—3/8" tubing. (Patent applied for.)

Price \$1.25 ea.

For service on your needs order from your dealer or write direct.

Your free copy giving complete details is available, write today for bulletin CR-1.



**MECHANICAL REFRIGERATION  
ENTERPRISES**

DEPT. 36

5032 LANKERSHIM BLVD.  
NORTH HOLLYWOOD, CALIF.



## OPPORTUNITIES

(Classified Advertising)

Rates: for "Positions Wanted," \$4.00 minimum, limit 25 words. For all other classifications, \$4.50 minimum for 25 words or under, each additional word 15c; boldface type or all capitals, \$7.50 minimum for 25 words or under, each additional word 20c. Box addresses count as five words, other addresses by actual word count. All advertisements in this section are payable in advance.

### REFRIGERATION ENGINEER

Large national manufacturer located in Chicago, requires an experienced Refrigeration Engineer to take charge of Engineering Laboratory and to initiate and aggressively follow through on new developments. Must be familiar with design and manufacturing practices for small refrigeration units as well as sheet metal fabrication. Outstanding educational and experience background required. This position represents an excellent opportunity to be associated permanently with a progressive, well established organization. Complete background of education and experience should be forwarded in first letter together with salary requirement. All replies will be held in strictest confidence. Box 10150, COMMERCIAL REFRIGERATION

### FOR SALE

Compressor. 7½ HP York evaporative type at less than distributor's cost. Bimel Company, Cincinnati, Ohio.

### LINES WANTED

Distributing Dealer Lines Wanted! Major and Traffic Appliances Ohio-Indiana-Michigan territory or part. We give active personal contact, sales meetings, with full promotional effort. Complete history and references will be given. Box 10250, COMMERCIAL REFRIGERATION.

### SEEGER DIVIDEND

The board of directors of Seeger Refrigerator Co. has declared an extra year-end cash dividend of \$1 per share, in addition to the quarterly cash dividend of 25 cents per share on the common stock.

## CHET BATTLES MOVES TO CRYSTAL LAKE, ILL.

J. C. (Chet) Battles, manufacturers' representative, announces that his new address will be Warwick Lane, Lakewood, Crystal Lake, Ill. Crystal Lake is 45 miles northwest of Chicago.

For 11 years prior to 1946 Battles was associated with Midwest Mfg. Co., Galesburg, pre-war manufacturers of domestic and commercial refrigerator cabinets. Battles held various positions with Midwest including chief inspector, sales engineer and refrigeration sales manager.

Battles left Midwest to act as a manufacturers representative for a

few firms in the refrigeration field including United Refrigerator Co., Hudson, Wis., who purchased Midwest's commercial setup.

## EDELMUTH IN CHARGE OF ARTKRAFT SALES

David L. Edelmuth, who recently joined Trubey Industries as vice president of Whiting Appliance Co., a subsidiary of Baltimore Porcelain Steel Corp., has been elected vice president in charge of sales of Artkraft Mfg. Corp. Edelmuth succeeds William M. Reed, whose resignation as vice president and general sales manager has been recently announced.

# NO MORE FREEZE-UPS

*of expansion valves or capillary tubes!*

## ICE-X works like magic

**SERVICE MEN SAY: "ICE-X IS GREAT!"**





When ice forms in expansion valves or capillary tubes, ICE-X is a sure remedy . . . ICE-X is non-corrosive—harmless to parts. An ice-eliminator that can't be beat for Freon, Carrene, or Methyl Chloride systems . . . Order from your jobber. If no jobber, order direct.

Service doesn't falter when it comes from Harry Alter.

## The HARRY ALTER CO.

1728 S. Michigan Ave. Chicago 16, Illinois

**Jobbers: Ask for special offer!**

Exclusive ICE-X Distributor

## • WALK-INS • ICE CUBE MAKERS • REACH-INS

FREEZERS



**a bottle cooler that means business . . .**



DRY KOOL BOTTLE COOLER

A proven profit-maker available in BROWN DULUX or STAINLESS STEEL in 4', 6', 8' and 10' lengths—removable or plug-in. United's original forced air system insures maximum air circulation and faster cooling with large capacity blowers under each door and coils that are up and out of the way.

- ✓ Streamline heavily insulated all steel cabinets.
- ✓ Stainless steel lift-a-way doors with roller bearings—"No busted fingers."
- ✓ Flush bottle decappers.
- ✓ More capacity per cubic foot.

SELL UNITED AND YOU SELL THE FINEST



## • DIRECT DRAW SYSTEMS • BOTTLE COOLERS

*We've Got a...*

**FULL HOUSE!**

**EVERYTHING FOR THE COMMERCIAL OR INDUSTRIAL  
ELECTRIC REPAIR SHOP!**

WRITE FOR FREE, 238 PAGE ILLUSTRATED CATALOGUE  
(On Your Letterhead, Please)

**COMPLETE-READING ELECTRIC CO., INC.**

106 S. JEFFERSON ST., CHICAGO 6, ILL.

TELEPHONE CENTRAL 6-5390

*"Your Best Source of Supply"*

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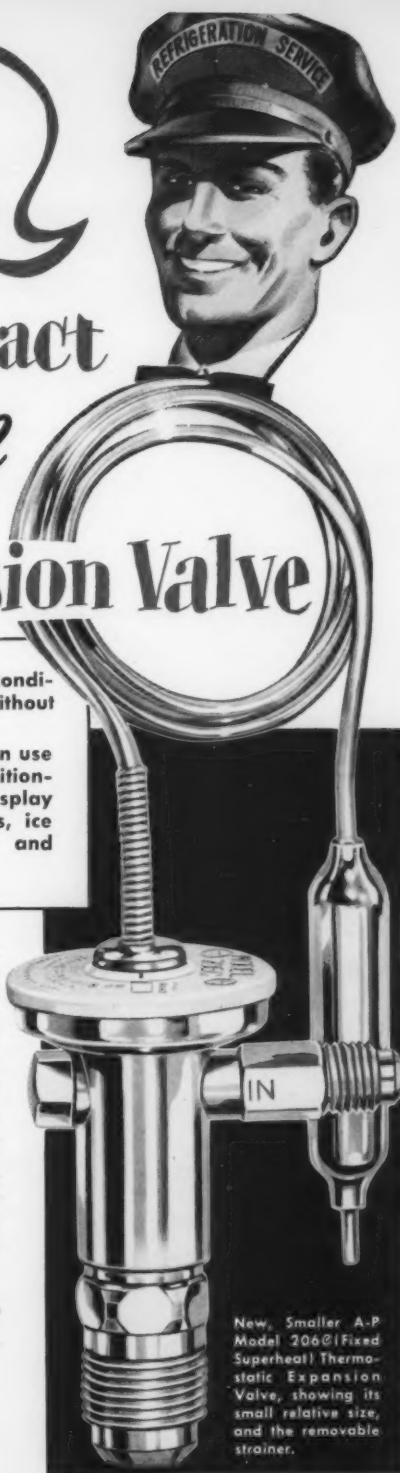
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